1982

Measuring the Impacts of Fasb Statement No. 8 and the Fluctuations in Foreign Currency Values on Multinational Corporation Security Prices.

Abdelsalam Ali Kablan
Louisiana State University and Agricultural & Mechanical College

Kablan, Abdelsalam Ali

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The Louisiana State University and Agricultural and Mechanical Col. . PH.D. 1982

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A Dissertation

Submitted to the Graduate Faculty
of the Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy

in

The Department of Accounting

by

Abdelsalam Kablan
B.A., University of Libya - Benghazi, 1973
M.S., University of Wisconsin - Madison, 1977
M.B.A., University of Wisconsin - Madison, 1978
May, 1982

ACKNOWLEDGEMENTS

I wish to express my appreciation and indebtedness to my committee, Professors Jerry E. Trapnell (Chairman), W. Patton Culbertson, Jr., Kent T. Fields, Jaime Agudelo, William Samson, for their full cooperation. Their criticisms were most constructive and helpful.

To Professor Jerry E. Trapnell, I convey my sincere gratitude for his insightful corrections, clarifications, and suggestions. His encouragement and moral support inspired me throughout the study.

I wish to thank Professor Kent T. Fields and Mr. Robert Lamy for their help in various computer programs and packages. For typing the final manuscript of the study, I thank Martha Prather. A special acknowledgement also goes to the University of Garyounis for the financial support throughout the course of my study.

Finally, I wish to express my deepest appreciation to my mother, to my wife, Fatma, to my children, Hussam, Weeam, and Buthina, to whom I dedicate this study, for their understanding, patience, and encouragement through the years of graduate study which made this all possible.

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ABSTRACT

The purpose of this study is twofold. The first is to measure the impact of FASB 8 on multinational corporation (MNC) security prices. The second is to investigate the association between currency fluctuations and MNC security prices.

Two types of empirical studies have been conducted to measure FASB 8's impact. The first were questionnaire studies measuring corporate managements' reactions toward the Statement. Their findings showed that corporate managers took certain costly decisions to alter the Statement's effects on reported earnings. The second type of study was conducted to measure the Statement's effect on security prices. Due to methodological problems, these market studies did not prove the Statement's negative impact.

This study employed an improved methodology which controlled for certain characteristics that are unique to MNCs. Three factors were tested, (1) the location of MNCs foreign investments, (2) the magnitude of foreign investments, and (3) interaction of the location and magnitude factors. Based on these factors, six groups were formed: stable currency (SC), unstable currency (UC), high magnitude (HM), low magnitude (LM), (HM/UC), and (LM/SC). The methodology employed nonaffected MNCs as control groups.

Residual analysis was conducted to measure the market's immediate reaction to the Statement. The market's response to corporate management reactions' to FASB 8 was tested by measuring the shifts in MNC systematic risks. The findings show that FASB 8 had significant negative impact on MNC security prices. Significant upward shifts in affected firms' systematic risks were found. Only location and interaction factors were found to provide information content to the market.

The association between foreign currency fluctuations and MNC security prices was tested. The results show that the association varies from one firm to another. On the average, 2 percent of the variations in MNC security prices can be explained by the variations in exchange rates.

The study has methodological, practical, and regulatory implications. Future research can benefit from the improved methodology used in this study. The findings may also assist market participants and corporate executives in various practical and investment decisions. The Financial Accounting Standards Board may benefit from these findings in setting future rules regarding MNCs.

CHAPTER I

INTRODUCTION

The conduct of business across national boundaries has built in extra dimensions of risk which are rarely encountered in domestic business transactions. The fluctuations in the host country's currency value against the dollar is one factor of these added risks on multinational corporations (MNCs). A devaluation of a host country's currency reduces the dollar value of a MNC's net assets and vice versa.

Prior to the issuance of the Financial Accounting Standards Board Statement No. 8 in October, 1975, MNCs had several alternative methods of translations of foreign financial statements into dollars. The treatment of the translation gains/losses differed from one firm to another. The Temporal Method of translation and the immediate recognition of translation gains/losses required in Statement No. 8 was not welcomed by either MNC managements or practicing certified public accountants (CPA). The new requirements caused great volatility in reported earnings which led corporate managements to make decisions to lessen such volatility in reported earnings.

Two types of studies have been conducted on measuring the impacts of Statement No. 8. Questionnaire type studies

were conducted where MNC managements were asked about their reactions to it. The second type was directed at measuring the impact of the Statement on security behavior.

The questionnaire type studies showed that Statement No. 8 affected management decision making. Decisions to become involved in hedging activities or to relocate and/or to withhold certain investments were attributed to Statement No. 8. Surprisingly, the capital market studies have not proved the alleged negative impact of FASB Statement No. 8. Yet the FASB has made major changes in Statement No. 8.

The findings by the questionnaire type studies, the increasing criticism to the FASB Statement No. 8, and the changes by the FASB support the beliefs that the methodologies used in previous empirical research to measure the impact of FASB No. 8 on security behavior are questionable. A thorough investigation of these methodologies identifies some major common weaknesses. Among these weaknesses are the failure to recognize and control for some important characteristics that are unique to MNCs, and the replications of methodologies that are more suitable for pure domestic firms than for MNCs. This study corrects for the major deficiencies in prior security market studies in this area.

Nature Of The Problem

Most of the criticism of Statement No. 8 that has appeared in the literature was directed toward the Statement's definition of net accounting exposure. Burns (1976) points out the discrepancy between the accounting data and economic data and the serious consequences of such discrepancy for the individual firm and for the national and international economic scene. He says:

> "For the firm, the discrepancy between accounting and economic values induces corporate managers to make wrong (nonoptimal) decision for the firm....
>
> For the international economy, investment by multinationals has likely been curtailed as a result of the new Standards and the allocation of resources for a given volume of investment has been distorted."[1]

In Forbes, June, 1978 issue, M. S. Forbes, Jr. used the case of Royal Dutch/Shell Group to attack FASB No. 8. The following are some quotes from the article.

> "The first-quarter report of the giant Royal Dutch/Shell Group underscores in a most dramatic way the foolishness, the perniciousness of Financial Accounting Standards Board Statement No. 8.....

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[1]Joseph M. Burns, Accounting Standards and International Finance With Special Reference to Multinationals (Washington, D.C.: American Enterprise Institute for Public Polich Research, 1976), p. 2.

> In the Case of Royal Dutch, FASB No. 8 forced the company to reduce its first three-month earnings by a staggering $510 million. Reported year-to-year earnings slumped 98%. In fact real operating earnings dropped by 39%.....
>
> Corporations now have thousands of people toiling to reduce the distortions that can come from FASB No. 8. Countless millions of dollars are being spent in borrowing and hedging to minimize earning volatility. Even investment decisions are being affected by this rule. FASB No. 8 is so utterly lacking in common sense that it should be scrapped immediately."[2]

There are two factors affecting the reporting of foreign exchange gains/losses: (1) net accounting exposure and (2) currency values. The former can be manipulated by management while the latter cannot.

In order to understand the problem associated with measuring the exchange gains or losses and the possible impacts of reporting such gains or losses, it is important at this point to clarify certain terms. Monetary assets are those assets dominated in a fixed number of units of money such as cash, marketable securities, accounts receivable, tax refunds receivable, and note receivables.

Monetary liabilities are those liabilities expressed in fixed monetary terms, such as accounts payable, notes payable, tax liability reserves, and bonds. Net monetary

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[2]M. S. Forbes, Jr., "Why Can't Accountants be Practical." Forbes, June 12, 1978, p. 23.

position (NMP) exposure is the difference between the monetary assets and monetary liabilities. It is positive if the former is greater than the latter and vice versa.

Table (1) illustrates the four possible cases resulting in exchange gains or losses.

TABLE 1

NET EXPOSURE GAINS OR LOSSES AS A RESULT OF FOREIGN CURRENCY VALUES CHANGES

NET MONETARY POSITION	FOREIGN EXCHANGE RATE	
	REVALUATION	DEVALUATION
Positive	Gains (Case 3)	Losses (Case 1)
Negative	Losses (Case 4)	Gains (Case 2)

The illustration shows that two parameters can affect the reported exchange gains or losses. These parameters are the change in the currency value between the beginning and the end of the period, and the NMP.

Multinationals managers have two options to choose from. They may control their NMP and minimize it perhaps to zero so any unfavorable fluctuations in currency values will not bring heavy exchange losses even if they believe

that these losses are temporary and will be offset in subsequent period(s). This type of action is what Burns (1976) calls a discrepancy between accounting and economic values and it prevents reaching optimal economic exposure. This type of action, of course, will have some direct cash flow implications and there should be some impact on stock prices.

A second alternative is to involve the firm in some kind of hedging activities especially if the projection of the currency value at the end of the period is unfavorable. There are always costs associated with hedging and this, of course, will have some direct cash flow implications which should affect the stock prices. These impacts on stock prices are studied here.

Purpose Of The Study

The theory of a competitive market implies that the equilibrium price of any goods or services at a particular moment in time is such that the available supply is equated to the aggregate demand.[3]

> "This price represents a consensus of the members trading in the market about the true worth of the good or service,

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[3]Thomas R. Dyckman, David H. Downes, and Robert P. Magee, Efficient Capital Markets and Accounting: A Critical Analysis (Prentice-Hall) 1975, p. 1.

> based on all publicly available information. As soon as a new piece of relevant information becomes available, it is analyzed and interpreted by the market. The result is a possible change in the existing equilibrium price. The new equilibrium price will hold until yet another bit of information is available for analysis and interpretation."[4]

The capital market is a competitive market. The degree of efficiency of this market is found to be in a semi-strong form [Fama, et al., 1970, among others]. Market efficiency implies that security prices fully reflect instantaneously all publicly available information in an unbiased fashion.[5]

The purpose of this study is not to examine the efficiency of the capital market. Based on previous empirical studies, the efficiency of such a market is assumed. This study investigates two main issues:

(1) The impact of FASB Statement No. 8 on MNC security behavior.

(2) The impact of foreign currency fluctuations on MNC security behavior before and after Statement No. 8.

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[4]Ibid., p. 1.

[5]Ibid., p. 15.

The Impact of FASB Statement No. 8

Previous empirical research conducted in this area provided conflicting results. One group of studies found that MNC managements were affected by Statement No. 8 and hence undertook certain decisions to lessen the impact of the Statement on the volatility of the reported earnings. These decisions are not hypothesized to be without cost and hence have some direct cash flow effect. The second type of research analyzed the economic impact of the Statement on MNC security behavior. Surprisingly this type of research failed to prove the alleged negative impact of the Statement caused by the volatility of the reported earnings and the change of the corporate management behavior to lessen such volatility. Nevertheless, the FASB has revised Statement No. 8.

A thorough investigation of the empirical research conducted to analyze the impact of Statement No. 8 on MNC security behavior revealed that the methodologies used shared the following weaknesses:

(1) MNCs are subject to political, social, and economical impacts different from pure domestic firms. These factors should be recognized and controlled. Previous studies failed to control for those factors and hence their findings may be questionable.

(2) The categorization of a firm as a multinational firm is vague and broad. Some firms have very minor

foreign investments and yet can be categorized as a multinational firm. Previous research treated all MNCs as such without controlling for the magnitude of each firm's foreign investments. The impact caused by FASB No. 8 on a firm with a high degree of foreign investments can be offset by the impact on a firm with a low magnitude of foreign investment. Dichotomizing MNCs into high and low level of investment groups is necessary in this type of study.

(3) The technique of using pair-matching as a control group requires that each pair of firms must share some common factors other than the factor(s) under study. Most of the previous empirical research used pure domestic firms for pair-matching. Domestic firms are not affected by FASB Statement No. 8. Therefore multinational firms are subject to factors different from the factors that affect domestic firms. Any MNC study should be limited to MNCs only.

In summary, one of the purposes of this study is analyzing the impact of FASB Statement No. 8 on MNC security behavior. An improved methodology is outlined and certain important factors are controlled.

The Impact of Foreign Currency Fluctuations

The second major purpose of this study is measuring the impact of foreign currency fluctuations on MNC security behavior. The translation of MNC foreign financial statements into dollar figures requires two elements: (1)

financial statement figures in terms of foreign currencies and (2) the dollar values of these foreign currencies. The fluctuations of the foreign currencies would certainly change the translated figures shown on MNCs' financial statements.

The question that should be addressed here is - Do investors evaluate the fluctuations in foreign currencies as a measure of risk? The broad definition of risk is the uncertainty of a future outcome. Operationally, the measurement of certain investment risks involves the expectation of future cash flows and the discount rate used to calculate the present value of these cash flows. The greater the uncertainty of future cash flows the higher the discount rate used and hence the higher the risk. For MNCs, future cash flows depend in part on the values of foreign currencies. Theoretically, there should be an association between foreign currency values and MNC security risks. Empirically, this phenomenon has not yet been tested.

In this study, the association between foreign currency values and MNC security prices and risks is tested. This association is studied before and after the issuance of FASB Statement No. 8 with the belief that this association is stronger during the period after the issuance of Statement No. 8.

Scope Of The Study

The area of international accounting has not been given its fair attention by academicians and researchers. This area of accounting is full of problems that need to be investigated. It is only until recently that the American Accounting Association (AAA) designed a special section to deal with this area in an effort to solve such problems.

In a DELPHI study sponsored by the International Accounting Section of the AAA, George M. Scott pointed out eighty-eight international accounting problems.[6] The problem of exchange rates and translation was at the top of the list.

This study is not intended to study all the aspects of the exchange rates and translation problem. The study is limited to the following.

(1) Studying the economic impact of Statement No. 8 on MNC securities prices by the use of a methodology that is suitable to MNCs.

(2) Measuring the impact of i) the magnitude of foreign investments and ii) the locations of

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[6]George M. Scott, Eighty-Eight International Accounting Problems in Rank Order of Importance - a DELPHI Evaluation (AAA - Sarasota, Fl.) 1980.

these investments as factors affecting MNCs' securities prices.

(3) Measuring the association between foreign currency fluctuations and MNC security measures of risks (systematic and unsystematic).

(4) The indirect impact of Statement No. 8 is also studied by testing the association pointed out in (3) above before and after the issuance of Statement No. 8.

Plan Of The Study

The next chapter reviews the historical developments of pronouncements and practices of financial statements translation. Chapter III critically examines relevant empirical studies. The methodology used in the study is described in Chapter IV. Chapter V presents the results and analysis. The final chapter, Chapter VI, summarizes the study and presents the conclusions.

CHAPTER II

HISTORICAL DEVELOPMENT OF PRONOUNCEMENTS AND PRACTICES

The Financial Accounting Standards Board Statement No. 8 is the major pronouncement that deals with the translation of multinational corporation subsidiaries' financial statements into dollars. The Statement was issued in October 1975 and became effective January 1976.

Previous to FASB Statement No. 8, there were no unified rules for translating subsidiaries' financial statements or the treatment of the translation gains or losses. As a result, many methods of translation and different treatments of translation gains or losses were in use.

In January 1982, the Statement No. 52 was issued which resulted in some changes in Statement No. 8. The new Statement still incorporates much of Statement No. 8 with some exceptions.

This chapter is divided into three sections. The first section reviews the pronouncements and practices that preceded Statement No. 8. The second section covers Statement No. 8 and its requirements. The third section highlights the new rules under Statement No. 52.

Pre-FASB Statement No. 8: Pronouncements and Practices[1]

ARB 43 Chapter 12

Chapter 12 of Accounting Research Bulletin No. 43 dealt with foreign operations and foreign exchange. Chapter 12 is, as stated in paragraph 22 of the bulletin, "no more than a brief resume of the generally acepted principles pertaining to the treatment of foreign exchange as applied to the statements of accounts of American corporations."[1]

According to this chapter, careful consideration should be given to the fundamental question of whether or not it is proper to consolidate the statements of foreign subsidiaries with the statements of United States companies. Consolidation was not required by ARB 43. Listed as possible ways of providing information relating to such foreign subsidiaries were:

> (a) To exclude foreign subsidiaries from consolidation and to furnish (1) statements in which only domestic subsidiaries are consolidated and (2) as to foreign subsidiaries, a summary in suitable form of their assets and liabilities, their income and losses for the year, and the parent company's equity therein. The total amount of investments in foreign subsidiaries should be shown separately, and

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[1]Committee on Accounting Procedures, Accounting Research Bulletin No. 6 (New York: American Institute of Certified Public Accountants, 1953), Ch. 12, Para. 22.

> the basis on which the amount was arrived at should be stated....The exclusion of foreign subsidiaries does not make it acceptable practice to include intercompany profits which would be eliminated if such subsidiaries were consolidated.
>
> (b) To consolidate domestic and foreign subsidiaries and to furnish in addition the summary described in (a) (2) above.
>
> (c) To furnish (1) complete consolidated statements and also (2) consolidated statements for domestic companies only.
>
> (d) To consolidate domestic and foreign subsidiaries and to furnish in addition parent company statements showing the investment in and income from foreign subsidiaries separately from those of domestic subsidiaries.[2]

With regard to balance sheet accounts, Chapter 12 specifies the use of the current-noncurrent method of translation. Fixed assets and other noncurrent assets should be translated into dollars at the rates prevailing when such assets were acquired or constructed. When large items are purchased in United States dollars, the U. S. dollar cost will be used. If, however, the purchase is made in some foreign currency, the cost of the noncurrent assets should be the equivalent of the amount of foreign currency in United States dollars, at the rate of exchange prevailing at the time payment is made. Depreciation on fixed assets should be computed on the cost of the asset as expressed in U. S. dollars,

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[2] Ibid., Para. 9

even if for purposes of local taxation it may be impossible to show the foreign currency equivalent of the full amount of depreciation on the foreign statements.

Cash, accounts receivable, and other current assets should generally be translated at the rate of exchange prevailing on the date of the balance sheet. Inventory should follow the standard rule of lower-of-cost-or-market.

The income statements of foreign branches or subsidiaries of domestic corporations conducting their business in foreign currencies should preferably be translated at the average rate of exchange applicable to each month. If, however, this procedure is too tedious, a carefully weighted average can be used.

According to ARB 43, exchange adjustments arising from currency devaluations were to be charged to retained earnings. This is allowed if exchange adjustments are so material in amount that their inclusion in the income statement would impair the significance of net income to an extent that misleading inferences might be drawn from them.

APB Opinion No. 6

As mentioned previously, under ARB 43 long-term receivables and long-term liabilities were to be translated at historical exchange rates. In Opinion No. 6, issued in October 1965, the Accounting Principles

Board stated that the translation of long-term receivables and long-term liabilities at current exchange rates is appropriate in many circumstances.[3] This modification of ARB 43, in effect, permitted the use of the monetary-nonmonetary method of translation.

ARS No. 12

In 1972 the American Institute of Certified Public Accountants published Accounting Research Study No. 12. This dealt with the reporting of foreign operations of U. S. companies in U. S. dollars.

According to the study, U. S. companies did not disclose enough financial information about their foreign operations when they complied with Chapter 12 of ARB 43. The study recommended certain disclosures for U. S. companies with foreign operations. They were:

(1) Financial information that pertains to foreign operations should be disclosed by country or group of countries if a company operates in countries with significantly different business environments.

(2) A summary of assets and liabilities that pertain to foreign operations should be presented under either the "accounting records" or "source of risk" method for all foreign countries or by country or group of countries.

(3) Net income of foreign subsidiaries should be disclosed in total or by country or group of countries. Disclosure of net income may

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[3]Accounting Principles Board, Accounting Principles Board Opinion No. 6 (New York: American Institute of Certified Public Accountants, 1965), Para. 18.

justifiably be omitted if net income must be measured by relying substantially on transfer prices or by allocating a substantial amount of common costs. The revenue and expense components of net income should also be disclosed. The portions of the sales or purchases of foreign subsidiaries that consist of transfers of product and the method of pricing transfers should be disclosed. The portions of the sales or purchases of foreign subsidiaries that consist of transfers of product and the method of pricing transfers should be disclosed if net income is measured by relying substantially on transfer prices. The total amount of common costs and the portion allocated to foreign subsidiaries in total or to each country or group of countries should be disclosed if net income is measured by allocating a substantial amount of common costs.

(4) If net income of foreign subsidiaries is not disclosed because of the problem of allocating common costs, their contribution margins should be disclosed in total or by country or group of countries. Disclosure of contribution margins may justifiably be omitted if contribution margins must be measured by relying substantially on transfer prices. The revenue and expense components of contribution margins should also be disclosed. The portions of the sales or purchases of foreign subsidiaries that consist of transfers of product and the method of pricing transfers should be disclosed if contribution margins are measured by relying substantially on transfer prices.

(5) Sales to U. S. and foreign customers should be disclosed in total and by country or groups of countries if different growth potentials for sales or risks of loss of markets are experienced among countries.[4]

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[4]Leonard Lorensen, Accounting Research Study No. 12 (New York: American Institute of Certified Public Accountants, 1972), pp. 93, 95.

FASB Statement No. 1

FASB Statement No. 1 was issued in December 1973. The Statement did not supersede, alter, or amend any previous pronouncements. Disclosure requirements were designed to provide information concerning a company's translation practices in order to facilitate the assessment of possible implications with respect to financial position and results of operations.

The Board concluded that certain disclosures should be made in financial statements that include amounts denominated in a foreign currency which have been translated into the currency of the reporting entity. Paraphrased, the required disclosures are:

(1) A statement of translation policies including the identification of (1) the balance sheet accounts that are translated at the current rate and (2) those that are translated at the historical rate.

(2) The rates used to translate income statement accounts (i.e., historical rates for specified accounts and a weighted average rate for all others).

(3) The time of recognition of gain or loss on foreign exchange contracts.

(4) The method of accounting for exchange adjustments.

(5) The amount by which the total of long-term receivables and total long-term payable translated at historical exchange rates would each increase or decrease at the balance sheet date if translated at current rates.

(6) The amount of gain or loss that has not been recognized on unperformed forward exchange contrats at the balance sheet date.[5]

Available Methods of Translation Prior to FASB Statement No. 8

Prior to FASB Statement No. 8, firms were allowed to choose from a wide range of acceptable methods in reporting the results of their multinational operations. There was a widespread use of the following three methods:

(1) Current/Noncurrent (C/NC) Method: "Under this method all foreign subsidiary current assets and current liabilities are translated into the currency of the parent company at the current exchange rate. Each noncurrent asset or noncurrent liability is translated at the exchange rate in effect at the time the asset was acquired or the liability incurred. Thus, historical exchange rates are used for noncurrent assets and noncurrent liabilities. The income statement, with the exception of revenue and expense items relating to noncurrent assets or noncurrent liabilities, is translated at the average rate prevailing during the period covered. Income statement items relating to noncurrent items (for example, depreciation expense) are translated at the same rate as the corresponding asset or liability.

(2) Monetary/Nonmonetary (M/NM) Method: Under this method, monetary items are translated at current exchange rates while nonmonetary items are translated at the rate prevailing at the date of acquisition or commitment. Operationally, this method usually translates all current assets except inventories and prepaid expenses and all liabilities at the current rate, and inventories, prepaid expenses,

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[5]Financial Accounting Standards Board, Statement of Accounting Standards No. 1 (Stamford, Connecticut: FASB, 1973), Para. 6.

fixed assets, and certain long-term investments are translated at historic rates. Income statement items are translated at the average rate for the period covered except those relating to nonmonetary items which are translated at the same rate as the corresponding balance sheet items.

(3) Hybrid or Modified Monetary (MM) Method: This method results in noncurrent assets being translated at historic rates and all other assets (including inventories) and all liabilities being translated at current rates."[6]

Treatments of Exchange Gains and Losses

Prior to Statement No. 8, three treatments of translation gains and losses were being used by MNCs.[7] They were:

(1) Immediate recognition in the income statement of both gains and losses.

(2) Deferral of both gains and losses.

(3) Deferral of gains and immediate recognition of losses.

FASB Statement No. 8

The Statement of Financial Accounting Standards No. 8 "Translation of Foreign Currency Financial Statements"

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[6]Ronald E. Dukes, An Empirical Investigation of the Effects of Statement of Financial Accounting Standards No. 8 on Security Return Behavior (Stamford, Connecticut: FASB, 1978), p. 11.

[7]Pakkala, A. L. "Foreign Exchange Accounting of Multinational Corporations." Financial Analysts Journal (March-April, 1975), p. 34.

was issued in October 1975,[8] and was amended by FASB Statement No. 20, "Accounting for Forward Exchange Contracts." Two interpretations were issued by the Board FASB Interpretation No. 15 and No. 17.

The three major areas concerned with foreign operations are:

(1) Accounting for a single transaction or several isolated transactions, such as a sale or a purchase.

(2) Restating financial statements to or from a foreign currency.

(3) Accounting for forward exchange contracts.

Since the scope of this study is limited to restating foreign financial statements, this section is limited to a discussion of translating such statements as required by Statement No. 8 required.

The following excerpts are from FASB Status Report No. 30, dated October 28, 1975. This report announced the release of FASB No. 8:

> "The statement requires a method that is similar to the monetary-nonmonetary method presently used in practice and the temporal

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[8]Financial Accounting Standards Board, Statement of Accounting Standard No. 8 (Stanford, Connecticut: FASB, 1975).

> method described in Accounting Research No. 12. It requires that exchange gains or losses resulting from the translating process enter into the determination of income in the current period, and not be deferred.
>
> Under the method adopted, cash, receivables, and payables are translated at the foreign exchange rate in effect at the balance sheet date. Other assets and liabilities are translated at the historical foreign exchange rate in effect when incurred, except that the exchange rate in effect at the balance sheet date is used to translate assets and liabilities that are accounted for on the basis of current prices....
>
> Financial statements may not be adjusted for a rate change that occurs after the date of the financial statements, although disclosure of the rate change and its effects, if significant, may be necessary."[9]

The Board's main objective of issuing Statement No. 8 can be summarized as follows:[10]

(1) Translation should present information in conformity with United States generally accepted accounting principles.

(2) Translation should present information which fairly measures the performance of management of the foreign entity.

(3) Translation should provide a single unit of measure for the financial statements.

(4) Translation should retain as a unit of measure the currency in which the assets and liabilities are measured.

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[9]George C. Watt. "Foreign Exchange Transaction and Translation." Handbook of Modern Accounting. Davidson and Weil, Edit. (McGraw-Hill, 1977), pp. 35-10, 11.

[10]FASB No. 8, op. cite, Para. 79.

(5) Translation should produce an exchange gain or loss which is consistent with the underlying economic reality.

The first step, necessary before any translation takes place, requires preparation of the financial statements (still expressed in the foreign currency) in conformity with U. S. Generally Accepted Accounting Principles (GAAP). Only after conformity with U. S. GAAP has been achieved that the process of translation can begin. Therefore, close scrutiny should be accorded the foreign-currency financial statements, their underlying assumptions, and their accounting principles prior to consideration of any translation procedure. Obviously, this requires accountants to have a working knowledge of the accounting practices and assumptions applied in those foreign countries where corporate operations are conducted and financial reports are initially prepared.

Translation of Asset and Liability Accounts

Two types of exchange rates are to be used to translate asset and liability accounts; (1) historical rates and (2) current rates. Monetary assets and liabilities, which are fixed in amount, should be translated at the current rate (the exchange rate at the balance sheet date). All other assets and liabilities are translated at historical rates (the rate that existed at the time the underlying related asset was acquired and liability was assumed).

Complications may emerge when the item to be translated is subject to the lower of cost or market rule. The Statement provided that "if inventory is written down to market in the foreign accounting records, it shall be translated at the rate in effect at the date of the write down unless the translated market amount exceeds the translated historical cost."

For example,[11] if a foreign enterprise writes its inventory down to reflect a lower of cost or market valuation, translation procedures require a comparison of two amounts before deciding upon the correct figure to be included in the translated financial statements. The U. S. company would translate the lower market valuation at the exchange rate in effect on the write down date. Then the historical cost valuation would be translated at the acquisition (historical) date exchange rate. If the translated market amount exceeds the translated historical cost amount the latter would be used, even though market is lower than cost in the foreign currency. If translated historical cost is higher, then translated market is the appropriate amount.

The FASB was asked to clarify the determination of market when applying the lower of cost or market rule

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[11] Raymond J. Clay, Jr. and William Holder. "A Guide to the Translation of Foreign Activities." The National Public Accountant, July 1976, p. 10.

in translated financial statements. The FASB was also requested to clarify the manner of reporting a write down of inventory resulting from application of that rule in the translated financial statement. The FASB responded by issuing FASB Interpretation No. 17. "Applying the Lower of Cost or Market Rule in Translated Financial Statements." Paragraph 5 of FASB Interpretation No. 17 states:

> "....When applying the liberal rule of cost or market, whichever is lower, in translated financial statements, translated market shall be current foreign currency replacement cost translated at the current rate except that:
>
> (a) Translated market shall not exceed the foreign currency net realizable value translated at the current rate, and
>
> (b) Translated market shall not be less than foreign currency net realizable value reduced by an allowance for an approximately normal profit margin translated at the current rate."[12]

The interpretation, in paragraphs 7-9, shows an illustrative example of applying the rule. This same procedure is used for assets, other than inventory, that may have to be written down from historical cost.

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[12]Financial Accounting Standards Board, "FASB Interpretation No. 17," Journal of Accountancy, May 1977, pp. 110-11.

The FASB was requested to clarify the application of FASB No. 8 to the translation of unamortized policy acquisition costs by a stock life insurance company. The Board responded by releasing FASB Interpretation No. 15, "Translation of Unamortized Policy Acquisition Costs by a Stock Life Insurance Company." Paragraph 5 of the Interpretation states:[13]

> "....Computation of a reserve deficiency shall be made in dollars after translation of the unamortized policy acquisition costs at historical rates and the liability for future policy benefits at the current rate. Computation of a reserve deficiency in dollars may require a charge (or an increased charge) to current earnings in the dollar statements for a reserve deficiency even though no such charge is required in the foreign statements. It may also require a charge to current earnings in the foreign statements to be reversed in whole or in part in preparing the dollar statements if the translated charge earnings exceed the reserve deficiency computed in dollars."

Translation of Equity Accounts

The historical cost of an investment must be used to evaluate adequately the results of operation in relation to funds invested. Accordingly, capital stock and additional paid-in capital should be translated at the rate prevailing when contributed by the parent company and others. If stock was purchased for U. S. dollars,

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[13]Financial Accounting Standards Board, "FASB Interpretation No. 15," Journal of Accountancy, December 1976, p. 99.

the original dollar cost should be maintained; if purchased with local currency assets, the stock should be translated at the rate in effect when the stock was acquired.

The ending balance of the retained earnings account in the translated balance sheet is merely the amount necessary to satisfy the balance sheet equation. Translated liabilities and contributed equity accounts are subtracted from translated assets, and the remaining amount reflects translated retained earnings. The difference between the translated retained earnings at the beginning of the period and the ending of the period plus or minus translated earnings or losses and dividends is the gain or loss on translation. This is essentially the same procedure recommended in the reporting of price level-adjusted financial statements.

Business Combinations

Business combinations accounted for by the pooling-of-interests method are translated as if the foreign operation had always been a subsidiary. Therefore, historical exchange rates are those recognized for specific transactions by the foreign subsidiary. Under the purchase method, assets and liabilities of a foreign operation are adjusted to their fair values at the date of acquisition and then translated at the exchange rate in effect at that date. The difference between the

related net assets and the dollar purchase price of the acquisition is goodwill or negative goodwill.[14]

Translation of Income Statement Accounts

Revenue and expense amounts related to balance sheet historical cost items (e.g., depreciation, gain or loss on disposal of property) should be translated at the rate of the original transaction. Reserve and expense amounts not related to balance sheet historical cost items should be translated at the average free exchange rate for the month. Paragraph 17 of Statement No. 8 requires that exchange gains or losses arising in translation because of the effect of exchange rate fluctuations should be recognized in net income for the period in which the rate changes.

As a check on the computation of the gross foreign currency translation gain or loss the following steps are recommended:[15]

(1) Obtain the retained earnings figure used on the previous year's translated balance sheet.

(2) Adjust this amount by the translated items (net income, dividends, etc.) that directly affect the retained earnings account.

(3) Compare the amount determined in step (2) above with the retained earnings amount used

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[14]Martin A. Miller, GAAP Guide (New York: Harcourt Brace Jovanovich, 1978), p. 16.06.

[15]Clay and Holder, op. cit., p. 11.

in preparing this year's translated balance sheet.

(4) If the amount computed in step (2) is greater than the current year's translated retained earnings, a translation loss has occurred. If the amount in step (2) is smaller, a gain has resulted.

Disclosure Requirements

Disclosure in the financial statements or related footnotes should include the following:[16]

(1) The aggregate exchange gain or loss included in determining net income for the period.

(2) A description and quantification of the effects of rate changes on reporting results of operations, excluding (1) above.

(3) Significant rate changes and related effects that occur subsequent to the balance sheet date.

FASB Statement No. 52

In December 1981, the FASB issued Statement No. 52 "Foreign Currency Translation", that replaced Statement No. 8 and resulted in some changes in the existing accounting and reporting requirements in this area. Statement No. 52 came out after long hearings and discussions of two Exposure Drafts. The first was issued in August 1980. A revision of the first Exposure Draft was issued in July 1981.

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[16]FASB No. 8, op. cit., Par. 32-34

Statement No. 52 adopts the "functional currency" approach to translating foreign currency financial statements. The Board stated the following objectives of translation under the functional currency approach:

> "a. To provide information that is generally compatible with the expected economic effects of a rate on an enterprise's cash flows and equity.
>
> b. To present the consolidated financial statements of an enterprise in conformity with U. S. generally accepted accounting principles.
>
> c. To reflect in consolidated financial statements the financial results and relationships of the individual consolidated entities as measured in their functional currencies.
>
> d. To use a "single unit of measure" for financial statements that include translated foreign amounts."[17]

The adoption of the functional currency approach by Statement 52 is the major departure from the provisions of Statement No. 8. Paragraph 5 of Statement 52 defines the functional currency as follows:

> ".....An entity's functional currency is the currency of the primary economic environment in which the entity operates; normally, that is the currency of the environment in which an entity primarily generates and expends cash..."

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[17]Financial Accounting Standards Board, Statement of Accounting Standard No. 52 (Stamford, Connecticut: FASB, 1981), Para. 70.

Appendix A, of the Statement, provides guidance for determination of the functional currency. (See Appendix A of the Statement.) Paragraph 11, however, added another condition for selecting the functional currency by stating the following:

> "The financial statements of a foreign entity in a highly inflationary economy shall be remeasured as if the functional currency were the reporting currency...For the purposes of this requirement, a highly inflationary economy is one that has cumulative inflation of approximately 100 percent or more over a 3-year period."

Based on determining the entity's functional currency, management has to apply either the Statement No. 8 requirements or the new requirements by FASB 52. If the functional currency is the reporting currency, U. S. dollar, the provisions of Statement No. 8 will still be followed. Only when the functional currency of an entity is a foreign currency will the new requirements of Statement No. 52 be applied.

The requirements of FASB Statements No. 52 regarding the translation of the financial statements and the disposition of the resulting gains or losses can be summarized as follows:[18]

1. The use of the current exchange rate, the prevailing exchange rate at the balance sheet date, to translate all of the assets and liability accounts.

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[18]Ibid., Para. 12-14.

2. Income statement items should be translated at the weighted average exchange rate for the period.

3. The translation gains or losses can be deferred and reported, net of related tax effects, as a separate component of stockholders' equity.

4. Upon sale or liquidation of a foreign entity, the amount attributable to that entity should be removed from the separate component of equity and be reported as part of the gain or loss on sale or liquidation of the investment for the period during which the sale or liquidation occurs.

Disclosure Requirements

Paragraph 31 states that the following minimum analysis should be disclosed in a separate financial statement, in notes to the financial statements, or as part of a statement of changes in equity.

a. Beginning and ending amount of cumulative translation adjustment.

b. The aggregate adjustment for the period resulting from translation adjustments and gains and losses from certain hedges and intercompany balances.

c. The amount of income taxes for the period allocated to translation adjustments.

d. The amounts transferred from cumulative translation adjustments and included in determining net income for the period as a result of the sale or complete or substantially complete liquidation of an investment in a foreign entity.

The effective date of the Statement is the fiscal years beginning on or after December 15, 1982. Earlier application is encouraged.[19]

Statement No. 52 Compared to Statement No. 8

As stated earlier, the requirements of Statement No. 8 are still applicable to those firms that meet the following two conditions:

1. The functional currency of the firm's entity is the U.S. dollar.
2. The firm's entity is located in a country with highly inflationary economy.

The new provisions of Statement No. 52 are applicable only when the functional currency of the firm's entity is a foreign currency given that the entity is not located in a country with a highly inflationary economy.

Much of the criticism about Statement No. 8 was focused on the inclusion of the resulting translation gains or losses in income statement which resulted in the volatility in reported earnings. Statement No. 52 simply shifted the adjustments from income to stockholder's equity.

Under Statement No. 8 certain items in the income statement, such as cost of goods sold and depreciation, were translated using historical exchange rates. Statement No. 52 requires that such items be translated using current exchange rate

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[19]Ibid., Para. 33.

which may cause greater volatility than before in reported earnings and financial position.

Summary

In this chapter, the historical development of pronouncements and practices was discussed. Prior to Statement No. 8, there were no unified rules for translating foreign financial statements or the treatments of the resulting translation gains or losses. Three methods of translation were in use: (1) Current/Noncurrent Method, (2) Monetary/Nonmonetary Method, and (3) Hybrid Method. There were three ways of treating the translation gains or losses: (1) immediate recognition in the income statement of both gains or losses, (2) deferral of both gains and losses, and (3) deferral of gains and immediate recognition of losses.

In October 1975, the Financial Accounting Standards Board issued Statement No. 8. The Statement required the use of the Temporal Method of translation along with the immediate recognition of the resulting gains or losses. The provisions of the Statement were discussed in details.

In December 1981, the Board issued Statement No. 52 which resulted in some changes in Statement No. 8 requirements. The main provision of Statement No. 52 that alter the use of Statement No. 8's requirement is the selection of a foreign currency as the entity's functional

currency. The provisions of Statement No. 52 were discussed with reference to Statement No. 8.

The following chapter reviews the previous empirical studies conducted in this area.

CHAPTER III

REVIEW OF LITERATURE

The Impact of FASB Statement No. 8

Since the early issuance of the exposure draft of Statement No. 8, many articles have appeared in the literature criticizing the new requirements. The criticism focused on two main phenomena caused by the Statement. First, MNC managements were concerned about the perceived volatility of reported earnings once deferral of translation of gains or losses was no longer allowed. This phenomenon was believed to increase firms market risk and hamper the ability to raise capital. Second, due to the new definition of net accounting exposure, management may make some decisions to reduce their exposure to exchange rate fluctuations and hence reduce earnings volatility. That is, management may have to engage in unnecessary heding, a fact which negatively affects cash flows due to the cost involved in this type of transactions.

There were a number of empirical studies conducted to measure the economic impacts of FASB Statement No. 8. These studies took two directions:

(1) Studies measuring the impact of the Statement on corporate management behavior. Corporate managements were asked, by using

surveys, whether Statement No. 8 affected their decision making processes.

(2) Studies measuring the impact of Statement No. 8 on MNC security prices.

There were only two major studies of the first type, Evans, Folks and Jilling [1978] and Shank, Dillard and Murdock [1979]. Both studies used questionnaires sent to a sample of corporate executives of the affected firms seeking whether Statement No. 8 affected their decisions regarding investments abroad; adjusting net monetary positions; shifting funds from one subsidiary to another; or engaging in hedging activities. The two studies came up with similar results. The study by Evans, Folks and Jilling [hereafter EFJ] will be used here as an example of the first type of study.

EFJ Study

The objective of (EFJ) study[1] was to measure whether the management of MNCs attempted as a result of Statement No. 8 to avoid any anticipated increase in the use, or change in the nature, of foreign exchange risk management practices. The data were obtained by survey sent to a sample of MNC executives. Four hundred and thirty

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[1]Thomas G. Evans, William R. Folks, Jr., and Michael Jilling. The Impact of Statement of Financial Accounting Standards No. 8 on the Foreign Exchange Risk Management Practices of American Multinationals: An Economic Impact Study (Stamford, Connecticut: FASB, November 1978).

questionnaires were sent, and only one hundred fifty-six completed questionnaires were returned.

The study dealt with the following issues: (1) objectives of exchange risk management, (2) organization for exchange risk management, (3) translation and exposure management, (4) exchange rate forecasting, (5) impact on financial planning, (6) exposure adjustment techniques, (7) a firm's characteristics, and (8) opinion questions on a number of specific issues relating to the impact of Statement No. 8.

Griffin summarized the major findings of the EFJ study as follows:[2]

(1) Firms often replaced debt denominated in one currency with debt denominated in another.

(2) Firms often changed average inventory amounts or the method of valuing inventories.

(3) Firms often changed remittances between foreign subsidiary and the U. S. Parent.

(4) Firms increased their hedging in foreign currency future markets.

(5) There were changes in the average collection period of receivables or payment period for payables denominated in a foreign currency.

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[2]Paul Griffin, "What harm has FASB 8 actually done?" Harvard Business Review (July-August 1979); p. 9.

(6) There were shifts in short-term and long-term borrowing in foreign currencies.

(7) There were alterations of the amount of local-currency cash and marketable securities held in foreign operations.

Such actions indicate that Statement 8 did in fact have great impacts on corporate management decisions. If this is true, and if the security market is efficient, the market risk structure of the firms would be expected to shift upward. In other words, the systematic risk of the affected firms would be expected to be greater after Statement No. 8.

The second type of study of the impact for Statement No. 8 was directed toward measuring the impacts of Statement No. 8 on MNC security prices. Examples of these studies were Dukes (1978), Fredrickson and Mogus (1978), Hendricks (1977), and Makin (1978).

The studies by Dukes (1978) and by Makin (1978) are used here as an example of the type of studies that measured the impact of Statement No. 8 on security prices.

Dukes Study

The main objective of Dukes study was to measure whether the requirements of Statement No. 8 that the temporal method of translation be used and that all translation gains and losses be recognized in current

income would cause the reported earnings fluctuation of multinationals to increase and thus adversely affect the market prices of their common stocks. The study was conducted on four hundred and seventy-nine multinational firms. These four hundred and seventy-nine firms were divided into six groups according to the method of translation used and the treatment of exchange gains or losses prior to the issuance of FASB No. 8.

The control sample was drawn from the NYSE population of domestic firms in the public utility and railroad industries. The control sample consisted of six groups. Each group was equal in the number of securities (i.e., firms) to comparable groups among the six affected sample groups.

After using "the "single-factor asset-pricing model" to determine the beta (β) for each firm in the sample and control groups, a pair-matching between firms in the sample group and firms in the control group was obtained based on the equality of their betas (β^2). The test was to compare the affected and unaffected firms of equal risk both before and after Statement No. 8 to determine whether there were significant differences in the behavior of their security returns.

Comparisons were made for three periods. The first was the 24-month period, January 1968 through December 1969. The second was the 60-month

period, from January 1970 through December 1974. The third period was the 24-month period from January 1975 through December 1976.

After forming portfolios of stocks with beta equal to one in each group, comparisons of security returns across groups and across time were obtained. The analysis did not reveal statistically significant differences in returns between any of the multinational portfolios and their matched control sample portfolios for any of the three periods examined. Dukes made some additional refinements of his control groups and tested for other variables but no significant results were obtained.

Makin Study

Makin examined the impact of Statement No. 8 on multinational firms stock prices along with the impact of floating exchange rates. He used the Capital Asset Pricing Model (CAPM) to form the basis for estimating the risk characteristics of the firms in his sample. Three groups were used in the analysis. The first was a control of five major domestic trucking firms. The second was twenty-four multinational firms which were from three primary industries (oil, chemicals, and drugs). The third group of thirteen firms represented a set of sensitive firms identified on the basis of reports in various publications as being the most affected by Statement No. 8.

Significant results were found only in the sensitive group. The oil, chemical, and drug group did not show any significant difference from the control group (trucking industry). These studies, however, share several weaknesses.

The studies replicate certain research methodologies that are designed for studying phenomena that belong to the same economy, same environment, and same political system and applies such a methodology to firms that are subject, in part, to many different types of economies, environments, and political systems. There was no attempt in any of these studies to control for these factors.

The studies used domestic firms as control groups. Domestic firms should not be used as control groups for multinational firms. The fact that Statement No. 8 affects only certain multinational firms should not be taken as a justification for using domestic firms, not affected by Statement No. 8, as a control group. In fact, even among multinational firms, foreign currency exchange rate fluctuations may affect a firm located in country A but may not affect another firm located in country B. Failure to control for extraneous variables, other than Statement No. 8, may bring mixed results and wrong conclusions may be reached.

The Impact of Foreign Currency Fluctuations

The objective of the Financial Accounting Standards Board regarding Statement No. 8 and now Statement 52 is to stablish standard rules and procedures. These rules dictate what exchange rates should be used to translate certain accounts and how the outcome, the exchange gains/losses, should be treated. In this study, the factor that influences the outcome of applying these rules is studied. This factor is the fluctuations in foreign currency values with respect to the home country currency value. The study is mainly an investigation of the association between security prices and currency values.

A number of empirical studies has been conducted on measuring the association between certain accounting variables and stock prices. The Ball and Brown (1968) study indicated that the sign of earnings forecast errors is associated with the sign of unsystematic returns.[3] The study by Beaver, Clarke, and Wright (1979) found high correlations between the magnitude of earnings forecast errors and unsystematic security returns.[4] The study

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[3]Ball, R., and P. Brown, "An Empirical Evaluation of Accounting Income Numbers," Journal of Accounting Research (Autumn 1968), pp. 159-78.

[4]Beaver, W., R. Clarke, and W. Wright, "The Association Between Unsystematic Security Returns and Magnitude of Earnings Forecast Errors," Journal of Accounting Research (Autumn 1979), pp. 316-40.

also found high correlation between the same variable and systematic risk. Other studies found limited evidence of the association between earnings and security prices.

Beaver, Kettler, and Scholes (1970) found a reasonable correlation between market determined risk and certain accounting based risk measures. Their main objective was searching for certain instrumental variables to be used to forecast future systematic risk. One of their conclusions was the need for further investigations of other variables:

> "One area for further study would be the specification of other variables to which investors might react and the determination of their association with the accounting measures and the market risk measures."[5]

Eskew (1979) replicated the Beaver, et al., (1970) study by adjusting for the betas nonstationarity problem. He reached the same conclusions.

Abdel-Khalik and McKeown (1978) investigated whether the association between securities rates of return and accounting changes is conditioned on other joint signals. They tested the joint effect of the switch to LIFO and

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[5]Beaver, W., P. Kettler, and M. Scholes, "The Association Between Market Determined and Accounting Determined Risk Measures," The Accounting Review (October 1979), p. 679.

the sign of expected growth in EPS. One of their main conclusions was:

> "This evidence confirms the proposition that accounting information is perceived and processed jointly with other publicly available information, and indicated that failure to consider such joint effects is a potential weakness of much of prior research."[6]

How the information about the fluctuations in foreign currency values is perceived by the market is not known yet. There is no previous empirical study that has attempted to investigate the association between foreign currency fluctuations and security prices. In this study, this association is investigated.

Summary

In this chapter, a review of previous empirical studies in this area was conducted. Two types of studies were identified. The first, was questionnaire type studies where corporate executives were asked about their reactions to Statement No. 8 requirements. The findings of these studies showed that corporate executives tended to make certain decisions to lessen the impact of the Statement on the reported income. These decisions were found to have negative cash flow and they are not without

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[6]Abdel-Khalik, A. and J. McKeown, "Understanding Accounting Changes in an Efficient Market: Evidence of Differential Reaction," The Accounting Review (October 1978), p. 863.

costs.

The second type of studies were conducted to measure the impact of the Statement on MNC security prices. Due to some identified weaknesses in the methodologies used in these studies, the alleged negative impact of the Statement could not be found. The methodological problems in these studies were identified. In the following chapter, these problems are accounted for and an improved methodology outlined. A methodology for testing for the association between the fluctuation in foreign currency values and MNC security prices is also outlined.

CHAPTER IV

METHODOLOGY

Since this study has two main objectives, two different methodologies are needed. The first section of this chapter outlines the methodology for studying the impact of FASB Statement No. 8 on MNC security prices. In the second section, the methodology for studying the association between foreign currency fluctuations and MNC security prices is discussed.

The Impact of FASB Statement No. 8

Prior research has indicated that Statement No. 8 affected the behavior of corporate management. Corporate managements have indicated that decisions are made to alter the effect of Statement No. 8 on reported earnings. The studies by Evans, et al., (1978) and Shank, et al., (1979), using questionnaires sent to the MNC managements, showed that corporate managements made decisions, as a result of Statement No. 8, to reduce the volatility in reported earnings. The revision of the Statement by the Financial Accounting Standards Boards demonstrates that the Board itself realized that changes were needed. The empirical studies that have been conducted on measuring the impact of Statement No. 8 on security behavior

have shown no significant impact.

The failure to prove empirically the negative impact of the Statement No. 8 on security prices can be attributed to three possible reasons. First, the Statement may not have any economic impact. Second, the market may not be efficient enough to capture Statement No. 8's impact. Finally, the methodologies used in those studies may be subject to (See Chapter I) questions. Factors one and two are rejected. It is hypothesized that weaknesses in the previous studies' methodologies led to erroneous conclusions. This study uses a new methodology that overcomes the weaknesses from which previous studies suffer.

To test the impact of Statement No. 8 on the security prices of MNC, the traditional residual analysis will be employed. Based on empirical testing, the following market model has become widely accepted:[1]

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \qquad (4.1)$$

where:

R_{it} = the return on security i in period t

α_i = a constant intercept term for security i

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[1]Sharpe, W. F. "A Simplified Model for Portfolio Analysis." Management Science (Jan. 1963), pp. 277-293.

β_i = a measure of the systematic volatility of security i

R_{mt} = the return on the market index in period t

ϵ_{it} = a random error term embodying all of the factors that account for the unsystematic return for security i

In essence, Eq. (4.1) says that the return on security i is related to the return on the market index in a linear fashion. Benjamin King [1966] found that almost 50 percent of the variation in a typical stock is explained by the variation in the whole market.[2] Brown and Ball [1976] found such an association to range from 35 to 40 percent.[3]

The theoretical argument behind the above linear association is that there are many events which affect to some degree the security returns of all firms.[4] These events can be of any nature. The most obvious are economic type events, e.g., monetary policies, changes in interest rates, etc. The relationship of individual securities' returns and the general market is measured by β (beta)

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[2]Benjamin King, "Market and Industry Factors in Stock Price Behavior," The Journal of Business, 1966, p. 151.

[3]Brown, P. and Ball, R., "Some Preliminary Findings on the Association Between the Earnings of a Firm, Its Industry, and the Economy," Suppl. to Journal of Accounting Research, 1967, p. 65.

[4]Ibid., p. 56.

or systematic risk coefficient. The unsystematic risk or error term (ε_{it}) measures the impact of firm specific events on security returns. This part of the study is concerned with the ε_{it} and β, since the impact of Statement No. 8 is hypothesized to have generalized and firm specific effects.

Pure domestic firms are influenced, directly and in whole, by one set of factors, the home country factors. MNCs, on the other hand, are subject, directly and in whole, to two sets of factors, the home country factors and the host countries factors. The use of Eq. (4.1) without the control for the locations of MNCs should produce mixed and misleading results. To control for location, only MNCs are studied. Pure domestic firms are excluded to avoid contamination of the results.

For the purpose of this study, MNCs are grouped according to the locations of their subsidiaries. The grouping of MNCs accordingly should isolate the effect of the host country factors. The economic events in England, for example, may not affect, at least directly, pure domestic firms but they affect, in a direct way, those firms that have subsidiaries in England.

Since MNCs have subsidiaries all over the world, and since many MNCs have subsidiaries in more than one country, the grouping of firms based on the locations of their subsidiaries on a country by country basis

was not feasible. A surrogate was used. This surrogate is the stability of each host country's exchange rate relative to the dollar. Currencies that are highly volatile with respect to the dollar are labeled unstable currencies (UC). Currencies that are not highly volatile with respect to the dollar are labeled stable currencies (SC).

The argument behind the use of the exchange rate as a surrogate stems from the fact that the change in the exchange rate is a result of changes of many factors within the country with respect to other countries. These factors are mainly economic or political in nature. For example, if the Japanese Yen and the German Mark move against the dollar at a certain time with the same degree and in the same direction, this indicates that all the factors that affect the exchange rates in both countries and/or the U.S., either remain the same or have moved in the same direction with the same degree or have moved in different directions but combine in such a way that the average effect is the same.

The following factors have proven to be important factors affecting the exchange rate values:[5]

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[5]Kreinin, Mordechal E., International Economics a Policy Approach Second Edition (HBJ, Inc., 1975), pp. 27-31.

1 - High inflation rate.

2 - An increase in money circulation disproportionate to the trend in gross national product.

3 - Deficits in national budget.

4 - Rising interest rates.

5 - Deficit in balance of trade.

6 - Deficit in balance of payments.

7 - Foreign exchange quotations.

8 - Decline in productivity.

9 - Instability of political system.

In order to measure the location effect, MNCs are divided into two groups according to their subsidiaries' locations. Group 1 represents MNCs that have investments in countries with relatively stable currencies (SC). Group 2 represents MNCs that have investments in countries with relatively unstable currencies (UC).

In order to measure the differences in variability in two distributions, the variance or the standard deviation is usually used. The variance is a measure of the absolute variability and can only be used as a measure of relative variability in two distributions when they are expressed in the same units. The problem at hand is to measure the relative variability in currency values which are expressed in different units. To overcome

this problem the coefficient of variation (CV) is employed.

The CV for each currency involved is calculated during the period January 1971 through December 1974 using the currency value at the end of each month expressed in terms of the dollar. The formula used is as follows:

$$CV\ (Y_i) = \frac{\sigma_{yi}}{\bar{Y}_i} \tag{4.2}$$

$$\bar{Y}_i = \sum_{t=1}^{48} Y_{it}/48$$

$$\sigma_{yi} = [(Y_{it} - \bar{Y}_i)^2/N-1]^{\frac{1}{2}}$$

where

$CV(Y_i)$ = the coefficient of variation of currency i.

Y_i = the dollar value for foreign currency i at the end of month t.

$\bar{Y}_t$ = the average dollar value of foreign currency i during the period of study.

σ_{yi} = the standard deviation of the dollar value foreign currency i during the period of study.

t = 1, 2,...N, N = 48 Jan. 1971 - Dec. 1974.

The CVs for all currencies, using Eq. (4.2), are calculated. The findings show that there are some currencies with zero CVs. This phenomenon is due to the fact that some countries tie their currencies with the dollar which results in zero variation in the values of these currencies. These currencies are considered stable and are not used to determine the relative stability of other currencies.

The CVs for all remaining currencies, which have CVs higher than zero, are arranged in a descending order. The median is used as a dividing line to determine the SC and UC groups. Each currency with a CV of equal to or less than the median is considered stable. While each currency with a CV of higher than the median is considered unstable. Firms which have investments in countries with relatively low CVs in their currencies are placed in Group 1 (SC) while firms with investments in countries with relatively high CVs in their currencies are placed in Group 2 (UC). Judgement is used when a company has investments in countries with high CV currencies and in countries with low CV currencies. When judgement cannot be exercised, the company is excluded from sampling.

The impact of Statement No. 8 on MNCs may differ from one MNC to another based on the magnitude of each MNC's foreign investment. As was explained earlier, the definition of a multinational firm is vague. A firm is characterized as being a multinational firm even if there are minor investments abroad relative to the firm's total assets. A preinvestigation was conducted, using VALUE LINE data, which revealed that 64 firms out of a total of 626 MNC firms have foreign investments of less than 5 percent of their total assets. The investigation also revealed that 38 firms have foreign investments of more than 50 percent of their total assets. The first type of firms should feel little to no impact of Statement No. 8 while the second type of firm should certainly feel a significant impact.

One of the purposes of this study is to measure the importance of the magnitude of MNCs foreign investments. The MNCs are subdivided into two additional groups based on the magnitude of their foreign investments. Group 3, represents firms with high level of foreign investments, i.e. (HM), firms that have more than 20 percent of their total assets invested in foreign countries. Group 4 represents firms with low levels of foreign investments, i.e. (LM), firms that have 20 percent or less of their total assets invested in foreign countries. The use of the 20 percent as a dividing

line is not totally arbitrary. A preinvestigation, using the VALUE LINE data base, revealed that approximately 50 percent of a total of 626 MNCs had foreign investments more than 20 percent of their total assets while the other 50 percent had foreign investments of 20 percent or less.

To summarize, two grouping factors have been identified. These two factors are: (1) the locations of MNC's subsidiaries; and (2) the magnitude of each firm's foreign investments relative to its total assets. By dividing MNCs according to their subsidiaries' locations into stable and unstable currencies, and according to their foreign investments magnitude, control over extraneous variables is improved. The general hypothesis of this study is that Statement No. 8 did actually affect MNCs security prices in varying degrees based on some factors. One of the purposes of this study is to test for two of these factors, location and magnitude, by measurig the impact of Statement No. 8 on MNCs security prices.

The interaction effect of the location and magnitude factor is studied also. Four more groups can be identified: (1) SC/LM, (2) SC/HM, (3) UC/LM, and (4) UC/HM. Sufficient samples could not be obtained for groups SC/HM and UC/LM. In addition, mixed results are expected in those two groups. The SC/LM and UC/HM represent two interesting

extremes and were investigated.

For the purpose of this study, two more groups were studied for the interaction factor. These two groups were: Group 5 (HM/UC) which includes firms with high foreign investment magnitude and with subsidiaries located in countries with relatively unstable currencies; and

Group 6 (LM/SC) which includes firms with low magnitude and with subsidiaries located in countries with relatively stable currencies.

The hypotheses to be tested are stated as follows:

HO. 1: The impact of Statement 8 on MNCs stock prices varies from one group to another. Firms with high foreign investments magnitude and/or have subsidiaries located in countries with relatively unstable currencies will be affected the most (Groups 2, 3, and 5). Firms with low foreign investments magnitude and/or have subsidiaries located in countries with relatively stable currencies will be affected the least (Groups 1, 4, and 6).

HO. 2: Because Statement No. 8 results in an accounting measurement system with discrepancies between it and a system based on economic value, corporate management will take actions which are suboptimal to the firm to counteract these discrepancies. Securities markets are efficient and thus will react adversely to the new

suboptimal decisions made by management (the Burns hypothesis).[6] The systematic risk will tend to shift upward for the affected firms. This upward shift varies from one group to another. Firms belonging to Groups 2, 3, and 5 will witness a higher shift in their systematic risk than firms in Groups 1, 4, and 6.

Sample Selection and Data

To obtain a sample of MNCs for each of the six groups, the following criteria were imposed:

(1) The firm has to be classified by Disclosure Journal (1971-1974) as using either (a) Current/Noncurrent method, (b) Monetary/Nonmonetary method, or (c) Hybrid method of translation, and further classified as either Immediate Recognition or Deferral of foreign exchange gains/losses.

(2) Any firm changing the method of translation from or to Monetary/Nonmonetary method and/or the treatment of foreign exchange gains/losses during the period 1971 through 1974 was excluded.

(3) There has to be security return data available on the COMPUSTAT magnetic data tapes for the period January 1971 through December 1978.

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[6] Joseph M. Burns, op, cit., p. 2.

(4) The MNC's foreign investment locations and the percentage of each MNC's foreign investments to the firm's total assets must be available. The VALUE LINE and 10-K reports were used.

(5) There has to be monthly currency value data from the International Monetary Fund (IMF) for each country in which the MNCs had subsidiaries.

Before the issuance of Statement No. 8, many firms used the Monetary/Nonmonetary method of translation along with the immediate recognition of foreign exchange gains/losses, the same as Statement No. 8 requirements. The only significant difference is that when the local currency carrying value of a nonmonetary asset is changed from original cost to current value (or market), the translation rate changes.

Theoretically, those firms using the Monetary/Nonmonetary method of translation along with the immediate recognition of foreign exchange gains/losses should not feel any significant impact on their security prices as a result of Statement No. 8. As a result, these MNCs were used as a control group. All firms that used other methods of translation, Current/Noncurrent and Hybrid, represented the experimental firms.

A pair-matching technique between the experimental and the control firms was employed. Within each of the six groups identified earlier, the matching was done based on two criteria: (1) industry membership, and (2) systematic risks (betas). For the first four groups, four digit Standard Industrial Code (SIC) classifications were used. For the last two groups, the two digit SIC codes were used when no reasonable candidate in the four or the three digit classification was available. The largest acceptable difference between the systematic risks (β) of a matched pair was arbitrarily set at .4.

Sampling Results

The Disclosure Journal was used to identify firms which would be affected by Statement No. 8 and for classifying them into experimental or control groups. Criterion 2 was imposed to ensure consistency of applying the same method of translation during the period of study prior to Statement No. 8. The imposition of criteria 1 and 2 resulted in a data base of 1217 firms. Of these firms, 198 used the Monetary/Nonmonetary method of translation, 255 firms used the Hybrid method, and 764 firms used the Current/Noncurrent method.

All firms using the Current/Noncurrent or the Hybrid method of translation prior to Statement No. 8 were grouped

together as experimental firms giving a total of 1019 firms. All firms that used the Monetary/Nonmonetary method of translation along with the immediate recognition of translation gains/losses prior to Statement No. 8 were considered nonaffected firms and placed in control groups. By checking for the treatment of translation gains/losses for the 198 firms that used the Monetary/Nonmonetary method of translation prior to FASB Statement No. 8, 39 firms were excluded. These 39 firms treated the resulting translation gains/losses different from Statement No. 8 requirements.

The imposition of criterion 3 reduced the total number of firms to 651 firms. Table (2) displays the results of criteria 4 and 5 and the sample size for each of the six groups after the matching process.

Formulation of the Tests

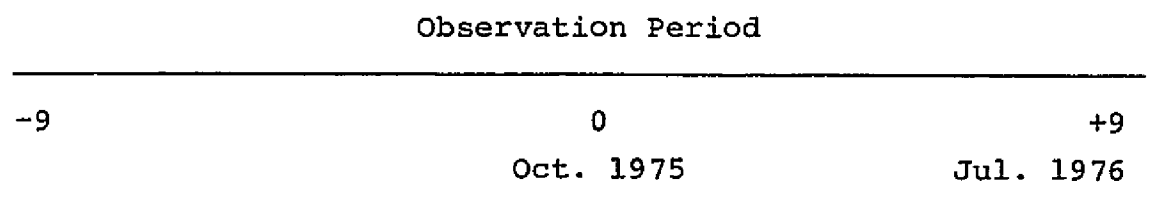
For testing hypothesis No. 1 (HO. 1), the general market model [Eq. 4.1] was used. For each firm, experimental or control, in each of the six groups, 48 months of data (January 1971 through December 1974) was used to estimate the parameters α's and β's. Nineteen months of data, centered on the month of releasing of Statement No. 8, was used to predict the residuals. Statement No. 8 was officially released in October 1975. The 19 month observation period covers January 1975 through July

Table 2

The Result of Imposing Criteria 4 and 5 and Sample Size After Pair-Matching for Each of the Six Groups

Group Number	Experimental	Control	Total
G1 (SC)			
Criteria 4 and 5	286	52	338
Matching Result	25	25	50
G2 (UC)			
Criteria 4 and 5	204	54	258
Matching Result	26	26	52
G3 (HM)			
Criteria 4 and 5	156	54	210
Matching Result	24	24	48
G4 (LM)			
Critiera 4 and 5	188	52	240
Matching Result	21	21	42
G5 (HM/UC)			
Criteria 4 and 5	73	34	107
Matching Result	20	20	40
G6 (LM/SC)			
Criteria 4 and 5	101	32	133
Matching Result	24	24	48

1976 as shown on the following figure.



The residuals during the observation period were obtained as follows:

$$U_{it} = R_{it} - (\alpha_i + \beta_i R_{mt}) \qquad (4.3)$$

where

U_{it} = the residual for firm i at month t.

α_i and β_i = parameters obtained from nonobservation period (January 1971 through December 1974) for firm i.

R_{it} and R_{mt} = as defined before where t = -9,...+9 (January 1975 to July 1976).

Each of the six groups was regarded as a portfolio. Since there are experimental and control firms within each group, six experimental portfolios and six matched control portfolios were available for study.

The average residuals (AR) and the cumulative average residuals (CAR) were calculated for each of the

twelve portfolios during the 19 month-observation period as follows:

$$AR_t = \frac{1}{N} \sum_{i=1}^{N} U_{it}$$

$$CAR = \sum_{t=-9}^{T} AR_t$$

where:

N = the number of firms in each portfolio

T = -9...+9

To assess the impact of Statement No. 8, the analysis was focused on comparing AR and CAR for each experimental portfolio with its matched control portfolio. To further assess the importance of each of the two factors, location and magnitude, comparisons of AR and CAR between experimental portfolios under each factor were conducted. The T-test was used to measure the significance of the AR for each portfolio and differences of the AR between portfolios. The CAR was also plotted for each two portfolios to measure the differences in direction of the impact.

The second hypothesis (HO. 2) states that as a result of FASB 8, managements of the affected firms

make some nonoptimal decisions. The market is efficient and reassessments of the affected firms' systematic risks is expected. Post-FASB 8 beta is hypothesized to be higher than Pre-FASB 8 beta.

In order to test this hypothesis, the same market model was used. Estimates of Pre-FASB 8 betas were obtained using 48 months of data, January 1971 through December 1974. Estimates of Post-FASB 8 betas were obtained using 48 months of data, January 1975 through December 1978.

Averages of betas were calculated for each of the twelve portfolios (experimental and control) for both periods (Pre-FASB 8 and Post-FASB 8). The analyses were focused on the differences of averages over time between the experimental and the control portfolios. Table 3 explains the method.[7] The T-test was used to test for the extent to which the mean beta values for the experimental and control portfolios being compared were different.[8] Chapter V reports the results of the tests discussed above.

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[7]This method was used by Shank, et al., op cit., with grouping based on the different methods of translation and/or the different treatments of exchange gains/losses. The groupings in this study are based on magnitude and/or locations.

[8]The same test was used by Shank, et al. (1979).

Table 3

Analyzing the Differences in Betas

	GROUP 1	GROUP 2...GROUP 6
	Experimental	Control
(1) Pre-FASB 8	XX	XX
(2) Post-FASB 8	XX	XX
(3) Difference Over Time (2-1)	XX	XX
(4) Comparative Difference (Experimental Minus Control)	X	

The Impact of Foreign Currency Fluctuations

In this part of the study, the association between foreign currency fluctuations and MNC security prices is investigated. It is important to investigate such an association. The translation process involves two factors:

(1) translation method that dictates which exchange rate is to be used to translate each item in financial statements and
(2) the values of the exchange rates.

The findings of this investigation will enhance the results obtained in the first part and will further reveal the importance of the exchange rate as a source of information to the security markets. This relationship has not been investigated before.

Three hypotheses were developed and tested:

HO.3:

There is a negative correlation between the security unsystematic return and the exchange rate values.

HO.4:

There is positive correlation between the firm's systematic risk (beta) and the variation in exchange rates.

HO.5:

As a result of FASB Statement No. 8, the above two correlations are stronger during the Post-FASB 8 period than during the Pre-FASB 8 period.

For testing hypothesis three, two models were employed. Model I is as follows:

$$\rho(RC_{it}, \varepsilon_{it}) < 0 \qquad (4\text{-}4)$$

where

RC_{it} = the return on currency i in period t.

ε_{it} = a random error, unsystematic returns, obtained from the market model, Eq. (4-1).

The reason for using the return on currency, RC, instead of currency value is due to the fact that in most cases more than one currency was involved and these currencies were expressed in different units. Standardization was necessary. The RC_{it} was calculated for each currency in a similar way as the return on a security was calculated for the market model, Eq. (4-1), as follows:

$$RC_{it} = \frac{Y_{it} - Y_{it-1}}{Y_{it-1}} \qquad (4\text{-}5)$$

where:

Y_{it} = the dollar value expressed in terms of the local currency i at the end of month t.

Y_{it-1} = the dollar value expressed in terms of the local currency i at the end of month t-1.

RC_{it} = as identified, Eq. (4-4).

When the firm has subsidiaries in more than one country, the mean of RC_{it} for the currencies involved were used. Model II is as follows:

$$R_{it} = \alpha_i + \beta_{1i} R_{mt} + \beta_{2i} RC_{it} + \varepsilon_{it} \qquad (4\text{-}6)$$

This model is essentially the same as the market model, Eq. (4-1), with the addition of RC_{it}. Brown and Ball [1967], among others, tested for the industry effect by introducing the industry index into the market model. Their findings show that the variation in stock prices was better explained by introducing the industry index into the model. The return on currency, RC_{it} was introduced into the market model, Eq. (4-1), to assess the importance of the exchange rate as a piece of additional information. Inferences can be made about the importance of the exchange rate as a piece of information by comparing R^2 and ε_{it} obtained from Eq. (4-6) with

those obtained from the market model, Eq. (4-1), and also by measuring the significance of β_{2i} in Eq. (4-6).

The fourth hypothesis, H4, states that the higher the variations in the exchange rate for the currencies involved, the higher the systematic risk for the firms that have investments in those countries. Notationally:

$$\rho[CV(Y_i),\beta] > 0 \qquad (4-7)$$

where:

$CV(Y_i)$ = the coefficient of variation of currency i, Eq. (4-2).

β_i = the systematic risk for security i, Eq. (4-1).

When the firm has investments in more than one country, the coefficient of variations for the currencies involved were averaged out. The Spearman-rank correlation and the Product-moment correlation were employed. The analyses were conducted using eight years, 1971-1978, of monthly data.

For the purpose of testing for the fifth hypothesis, H5, the above two hypotheses were tested using the following two sub-periods:

(1) Pre-FASB 8 Period (Jan., 1971 - Dec., 1974)

(2) Post-FASB 8 Period (Jan., 1975 - Dec., 1978)

For each of the two sub-periods, the following variables were needed:

1 - the return on currency i in month t (RC_{it}) using Eq. (4-4) where t = 1,...48.

2 - The return on security i in month t (R_{it}) where t = 1,...48.

3 - The return on the market index in month t (R_{mt}) where t = 1,...48.

4 - The firm's monthly unsystematic returns (ε_{it}), using the market model, Eq. (4-1), where t = 1,...48.

5 - The coefficient of variation of currency i [$CV(Y_i)$] during each of the two sub-periods, using Eq. (4-2).

6 - The firm's systematic risk (β_i) during each of the two sub-periods, using the market model Eq. (4-1).

A sample of fifty (50) multinational corporations was randomly selected from the total population of MNC that met the following criteria:

1 - The firm had to have significant foreign investments of 20 percent or more of the firm's total assets.

2 - The firm's foreign investments' locations must be identifiable.

3 - The firm should not have substantial investments in more than six countries.

4 - There had to be monthly security return data available on COMPUSTAT magnetic data tapes for the period Jan., 1971 through Dec., 1978.

5 - There had to be monthly currency value data on International Monetary Fund (IMF) publication for each country in which the firm had investments.

The justification for imposing criterion 1 is to ensure the firm stock prices' sensitivity to currency value fluctuations. The 20 percent criterion was set for reasons discussed earlier. Criterion 2 was imposed to identify the currency(s) involved.

Certain firms have investments in a great number of countries. When a large number of currencies is involved, the averaging process washes out any fluctuations in the currency values. For this reason and for practical reasons, the six country-limit in criterion 3 was imposed. Criteria 4 and 5 were imposed for data availability.

For testing hypothesis three by using Model I, Eq. (4-4), linear regression was employed using the return on currency, RC_{it}, as the independent variable and the unsystematic returns, ϵ_{it}, as the dependent variable. Inferences about the importance of the exchange rate as a source of information can be made by examining the significance of the parameters and the regression models. By employing Model II, the same inferences can be made by comparing R^2 and the significance of the regression obtained from Eq. (4-6) with those obtained from the market model, Eq. (4-1), and also by measuring the significance of β_{2i} in Eq. (4-6).

The Spearman-rank Correlation and the Product-moment Correlation were used to test for hypothesis four. Inferences about the association of the variation in exchange rates were made by examining the significance of the correlations.

The fifth hypothesis stated that the associations tested in hypotheses three and four are stronger during the Post-FASB 8 period than during the Pre-FASB 8 period. Inferences about this hypothesis, HO.5 were made by comparing the results obtained during the Post-FASB 8 period with the results obtained during the Pre-FASB 8 Period.

Summary:

In the first part of this chapter, the methodology used to measure the impact of FASB 8 on MNC security prices was outlined. Six groups with two portfolios in each, experimental and control, were formed based on two factors: (1) the locations of MNCs' subsidiaries; and (2) the magnitude of MNC foreign investments. Two hypotheses were presented. Residual analysis, using AR and CAR was outlined to test for the first hypothesis. The change in systematic risk was analyzed to test for the second hypothesis.

The methodology used for testing the impact of foreign currency fluctuations on MNC security prices was outlined in the second part of this chapter. Three hypotheses were raised. Two models were identified to test for the third hypothesis using linear regression technique. The Product-moment and the Spearman-rank Correlations were employed to test for the fourth hypothesis. To test for the fifth hypothesis, the results obtained from testing hypotheses three and four during the Post-FASB 8 period are compared with the results obtained during the Pre-FASB 8 period. In the next chapter, the test results are reported.

CHAPTER V

RESULTS AND ANALYSES

In the previous chapter, five hypotheses were stated. The first two were concerned with testing the impact of Statement No. 8 on MNC security prices. The last three hypotheses were raised to test the impact of foreign currency fluctuations on MNC security prices. The methodologies for testing these hypotheses were also outlined.

In this chapter, the results of each effect along with the analyses are reported separately in two major sections. The first section reports the findings of testing for the effect of Statement No. 8 on MNC security prices. In the second section, the results of testing the association between MNC security prices and currency value fluctuations are reported.

The Impact of Statement No. 8 on MNC Security Prices

Previous empirical studies failed to find the hypothesized negative impact of Statement No. 8 on MNC security prices. As it was discussed earlier, the inability of those studies to find a negative impact was attributed mainly to weaknesses in the

methodologies used. Daley and Scott (1979) commented on the findings by Dukes (1978) pointing out the weakness of his methodology:

> "It would appear that the research by Dukes would lead to the conclusion that little information, if any, was disclosed to the market via FASB 8. At least, there seems to be no indication that any information which aid in the assessment of the risks associated with international operation was imparted. However, there is always the possibility that due to the offsetting effect of some other uncontrolled variables, the effects of FASB 8 were masked. This possibility can only be assessed by future research."[1]

In this study, this possibility was accounted for. The methodology used, described in the previous chapter, was designed to control for extraneous variables that may intervene and alter the results. The methodology used the pair-matching technique along with the control and testing of two important factors, (1) the locations of the firms' subsidiaries and (2) the magnitude of foreign investments.

Two hypotheses were raised. The first hypothesis tested for the immediate market reaction to Statement No. 8 using residual analyses. The second hypothesis tested for the market reaction to the Statement in a longer period

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[1]Lane Daley and George Scott. "Measuring the Economic Effect of Exchange Rate Changes on American Companies" (Unpublished Paper presented at the American Accounting Association Annual Meeting August 21-25, 1975, Honolulu, Hawaii).

by testing for the shifts in portfolios' systematic risks, (β). The first part of this section reports the results of the first hypothesis. In the second part of this section, the findings and analyses for testing the second hypothesis are shown.

[A] RESIDUAL ANALYSIS

The first hypothesis, HO 1, states that the impact of Statement No. 8 on MNCs stock prices varies from one group to another based on the two identified factors: (1) location and (2) magnitude. Of the six identified groups, Groups 2, 3, and 5 will be affected the most. Groups 1, 4, and 6 will be affected the least.

To measure the effect of FASB No. 8, the abnormal returns during a nineteen month-observation period surrounding the month of releasing the Statement were studied. The market model, Eq. (4-1), with data for the 48 month period, Jan., 1971-Dec., 1974, was used to obtain estimates for the parameters αs and βs. These parameters were used to obtain the abnormal returns for each month during the observation period (t = -9 to t = +9) in the following way:

$$U_{it} = R_{it} - (\alpha i + \beta_i R_{mt})$$

where:

U_{it} = the residual for firm i at month t

α_i and β_i = the parameters obtained from the non-observation period (Jan., 1971 to Dec., 1974) for firm i, Eq. (4-1)

R_i and R_{mt} = as defined earlier, Eq. (4-1), where t = -9,...+9 (Jan., 1975 to July, 1976).

The average residuals (AR) and the cumulative average residuals (CAR) were calculated for each portfolio during each of the nineteen month-observation period as follows:

$$AR_t = \frac{1}{N} \sum_{i=1}^{N} U_{it}$$

$$CAR_t = \sum_{t=-9}^{T} AR_t$$

where:

N = the number of firms in each portfolio

T = -9,.....+9

If there are no unusual price movements prior to the release of Statement No. 8 (Oct., 1975), one would expect both the AR_t and CAR_t, for t = -9 to t = 0, to fluctuate randomly about zero. The conclusion then would be that Statement No. 8 did not have any impact.

However, if the Statement did have negative impact, this should show up in the form of negative monthly average residuals as t approaches 0 and a corresponding decline in CAR_t.

In the previous chapter, six groups were identified. Under each group, two portfolios were formed (experimental and control) providing twelve portfolios and six possible comparisons. To further assess the importance of the identified factors (location, magnitude, and interaction), three more comparisons were needed using only experimental portfolios. Below, the results and analyses for each pair of portfolios for each of the nine comparisons are shown.

(1) Location Effect

In order to better assess the effect of FASB 8, MNC's were divided into two groups. Group 1 (SC) included those firms that have subsidiaries located in countries with relatively stable currencies. Group 2 (UC) included firms with subsidiaries located in countries with relatively unstable currency. The hypothesis states that the impact of the Statement is greater on firms belonging to Group 2 than Group 1.

a - Group 1 (SC):

Summary statistics of average residuals (AR) and cumulative average residuals (CAR) for both portfolios, experimental and control, for the 19 month-

observation period are presented in Table 4. The CARs for the same period are graphically shown in Figure 1.

The analysis of Table 4 shows that Statement No. 8 did have significant negative impact. The market reaction to the Statement started in period t = -2 and continued until period t = 1. The stock prices of the experimental firms dropped by about 8.4 percent during this four month-period. In month t = -2, the prices dropped by 4.9 percent which is significant at the .01 level.

For the control firms, the behavior of the residuals followed the same pattern. For the same four month-period, the prices dropped by 9.4 percent. In period t = -2 alone, the prices dropped by 5.6 percent which is significant at the .01 level.

Figure 1 depicts the CAR for both portfolios, experimental and control, during the observation period t = -9 to t = +9. Notice the similarity in the behavior of CAR for both portfolios. Both portfolios felt the negative impact of the Statement in the same magnitude. No significant difference in the impact between both portfolios was found.

b - Group 2 (UC):

Table 5 presents the summary statistics of the average residuals (AR) and the cumulative average residuals, for both experimental and control portfolios,

TABLE 4

Residual Summary Statistics for Group 1 (SC)

Month in Observation Period	Experimental Firms Monthly AR	Experimental Firms Monthly CAR	Control Firms Monthly AR	Control Firms Monthly CAR	Significance[(a)] of Residual Differences
-9	.0715	.0715	-.0359	-.0359	.03
-8	-.0051	.0664	.0484**	.0125	.11
-7	.0061	.0725	.0049	.0174	.97
-6	.0075	.0801	.0257	.0431	.52
-5	-.0281	.0519	-.0130	.0301	.68
-4	.0423**	.0943	.0682***	.0984	.38
-3	.0161	.1104	.0022	.1006	.46
-2	-.0492***	.0612	-.0555***	.0451	.73
-1	-.0308	.0304	-.0168	.0283	.69
0	.0192	.0497	-.0169	.0113	.18
1	-.0228*	.0269	-.0043	.0070	.31
2	.1037***	.1306	.1063***	.1133	.95
3	.0308	.1613	.0330	.1463	.96
4	.0124	.1737	-.0160	.1303	.36
5	-.0281	.1456	-.0488***	.0814	.24
6	.0007	.1463	.0096	.0910	.69
7	-.0374*	.1089	-.0230	.0680	.54
8	.0161	.1251	.0343***	.1024	.45
9	-.0280	.0971	-.0039	.0985	.34

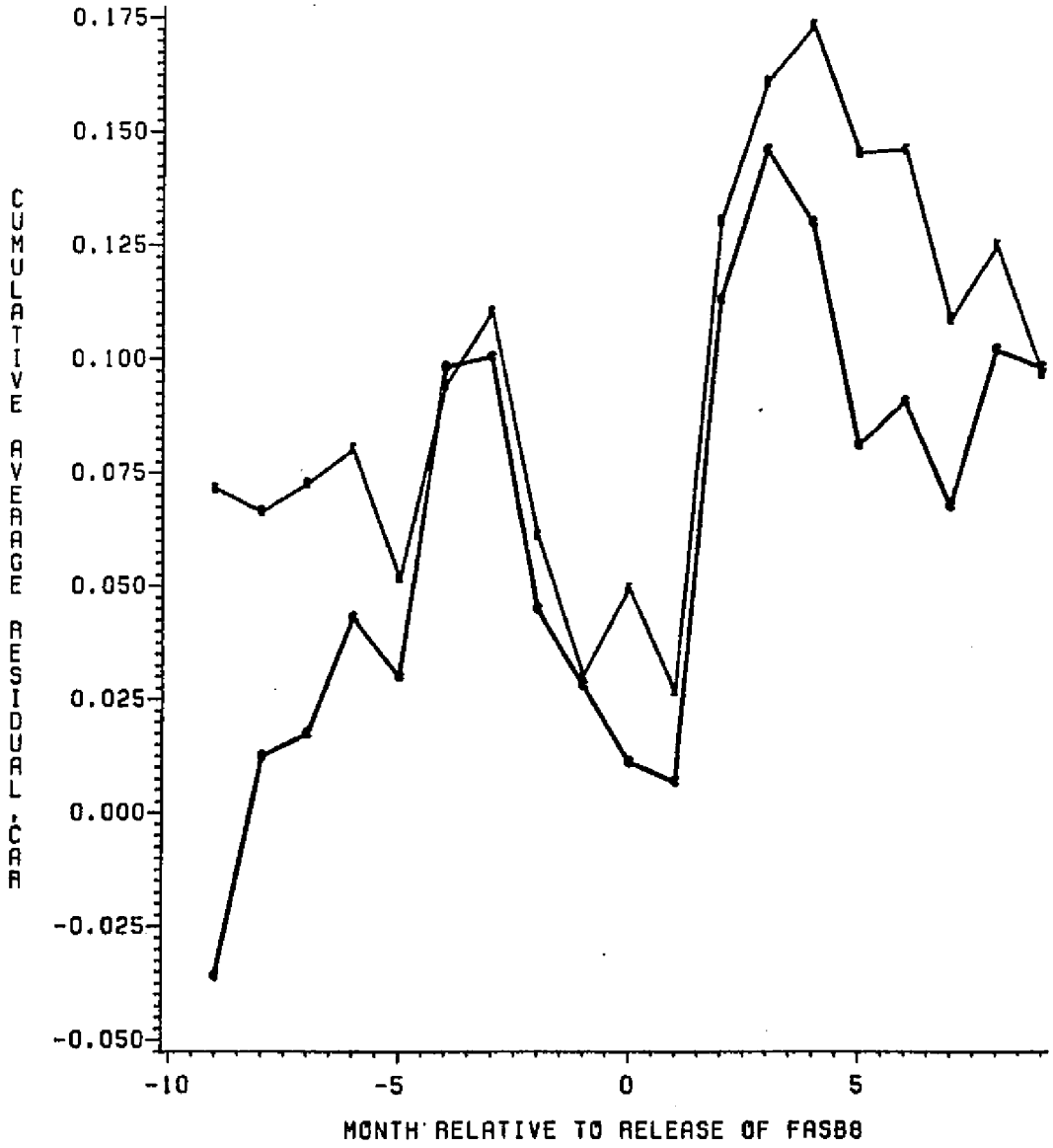
(a) Probability of significance that average residual differences = 0

* Significant at .10 level.

** Significant at .05 level.

*** Significant at .01 level.

GROUP(1) STABLE CURRENCY



E=EXPERIMENTAL FIRMS
C=CONTROL FIRMS

FIGURE(1)

for the 19 month-observation period. Figure 2 depicts the behavior of CAR for both portfolios during the same period.

The analysis of Table 5 shows that FASB 8 did have significant negative impact on both portfolios. However, the degree of this impact varies between the two portfolios. The experimental portfolio witnessed a higher negative impact than its counterpart control portfolio.

The average stock prices for the experimental firms dropped by 9.3 percent in a five month-period, from $t = -3$ to $t = 1$, averaging a monthly drop of 1.9 percent. The average prices continued to drop for four continuous months, from $t = -3$ to $t = 0$, totaling a drop of 11.6 percent. In month $t = -2$ alone, the average prices dropped by 7.4 percent with a significance level of .001.

The analysis for the control portfolio shows that the negative impact of the Statement was felt on the stock prices for these firms, too. However, this negative impact was far less in magnitude as compared to the experimental portfolio. During the same five month-period, $t = -3$ to $t = 1$, the average stock prices dropped by 4.4 percent. The average monthly drop in this five month-period was less than .9 percent.

The CAR, for both portfolios, depicted in Figure 2, shows a similar behavior up to period $t = -4$. A

TABLE 5

Residual Summary Statistics for Group 2 (UC)

Month in Observation Period	Experimental Firms		Control Firms		Significance[(a)] of Residual Differences
	Monthly AR	Monthly CAR	Monthly AR	Monthly CAR	
-9	.0623*	.0623	.0596**	.0596	.95
-8	.0803*	.1425	.0121	.0717	.19
-7	.0090	.1515	.0721**	.1438	.09
-6	.0399	.1914	.0454	.1892	.91
-5	.0285	.2199	-.0155	.1737	.28
-4	.0061	.2260	.0365	.2103	.35
-3	-.0108	.2152	.0188	.2290	.22
-2	-.0735***	.1417	-.0612***	.1678	.54
-1	-.0219	.1198	-.0106	.1572	.75
0	-.0098	.1010	.0260	.1833	.30
1	.0229	.1329	-.0171	.1662	.20
2	.1454***	.2783	.0833***	.2495	.20
3	.0575*	.3358	-.0124	.2371	.08
4	.0164	.3522	.0497**	.2867	.33
5	-.0302***	.3219	-.0107	.2761	.37
6	-.0145	.3075	.0096	.2857	.28
7	.0011	.3086	-.0199	.2658	.31
8	.0033	.3119	-.0032	.2626	.83
9	.0161	.3280	-.0242**	.2384	.15

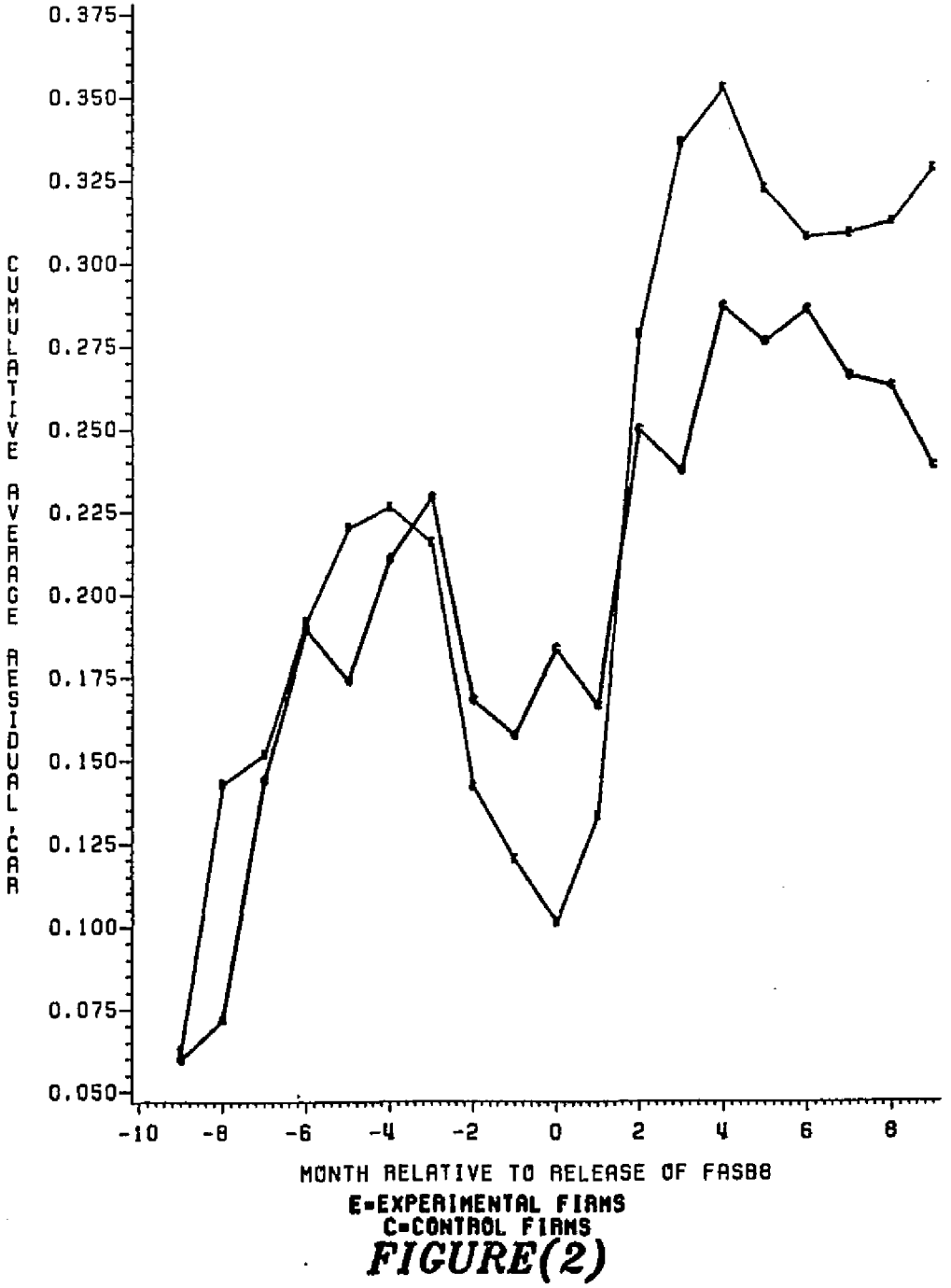
(a) Probability of significance that average residual differences = 0

* Significant at .10 level.

** Significant at .05 level.

*** Significant at .01 level.

GROUP(2) UNSTABLE CURRENCY



FIGURE(2)

noticeable spread can be seen at period t = 0. Notice the decreasing trend in the experimental firms' stock prices starting from period t = -4 to t = 0. The trend for the control firms is not as steep.

Comparing the findings for Group 2 (UC) with the findings for Group 1 (SC), the following remarks can be made:

(1) The market reacted to Statement No. 8 in a negative way as was initially expected. Previous empirical research failed to show such an impact.

(2) Firms belonging to control portfolios were not expected to witness any significant impact. The market failed to realize that the requirements by Statement No. 8 are almost identical to those firms that used the Monetary/Nonmonetary method of translation along with the immediate recognition of the resulting translation gains/losses.

(3) The noticeable difference between the experimental and control portfolio in Group 2 (UC), as compared with Group 1 (SC), gives partial support to the first hypothesis (HO 1). The market distinguished between firms based on the locations of their subsidiaries.

c - Stable vs. Unstable:

In order to gain further insight about the importance of the location factor, the results for the experimental portfolio in Group 2 (UC) were compared with the results obtained for the experimental portfolio in Group 1 (SC). The focus was made on a shorter observation period, from t = -5 to t = 3. For the convenience of comparison, the findings for both experimental portfolios shown in Tables 4 and 5 were reproduced and displayed in Table 6. Columns 3 and 6 show the percentage of negative residuals for each period.

The experimental portfolio that belongs to Group 2 (UC) witnessed a greater drop in the average stock prices as compared to the experimental portfolio of Group 1 (SC). Using the five month-observation period from t = -3 to t = 1, the average drop was 9.3 percent and 6.7 percent, respectively. By using only the four month-period, t = -3 to t = 0, the difference in impact was even higher. The experimental portfolio from Group 2 (UC) had a 11.6 percent drop in average stock prices compared with a 4.5 percent drop for the experimental portfolio in Group 1 (SC) during the same period.

Figure 3 displays the behavior of the cumulative average residuals (CAR) for both portfolios. The CAR for the experimental portfolio from Group 2 (UC) was labeled by the letter M for most affected firms. The

TABLE 6

Residual Summary Statistics for Location Effect

Most Affected vs. Least Affected

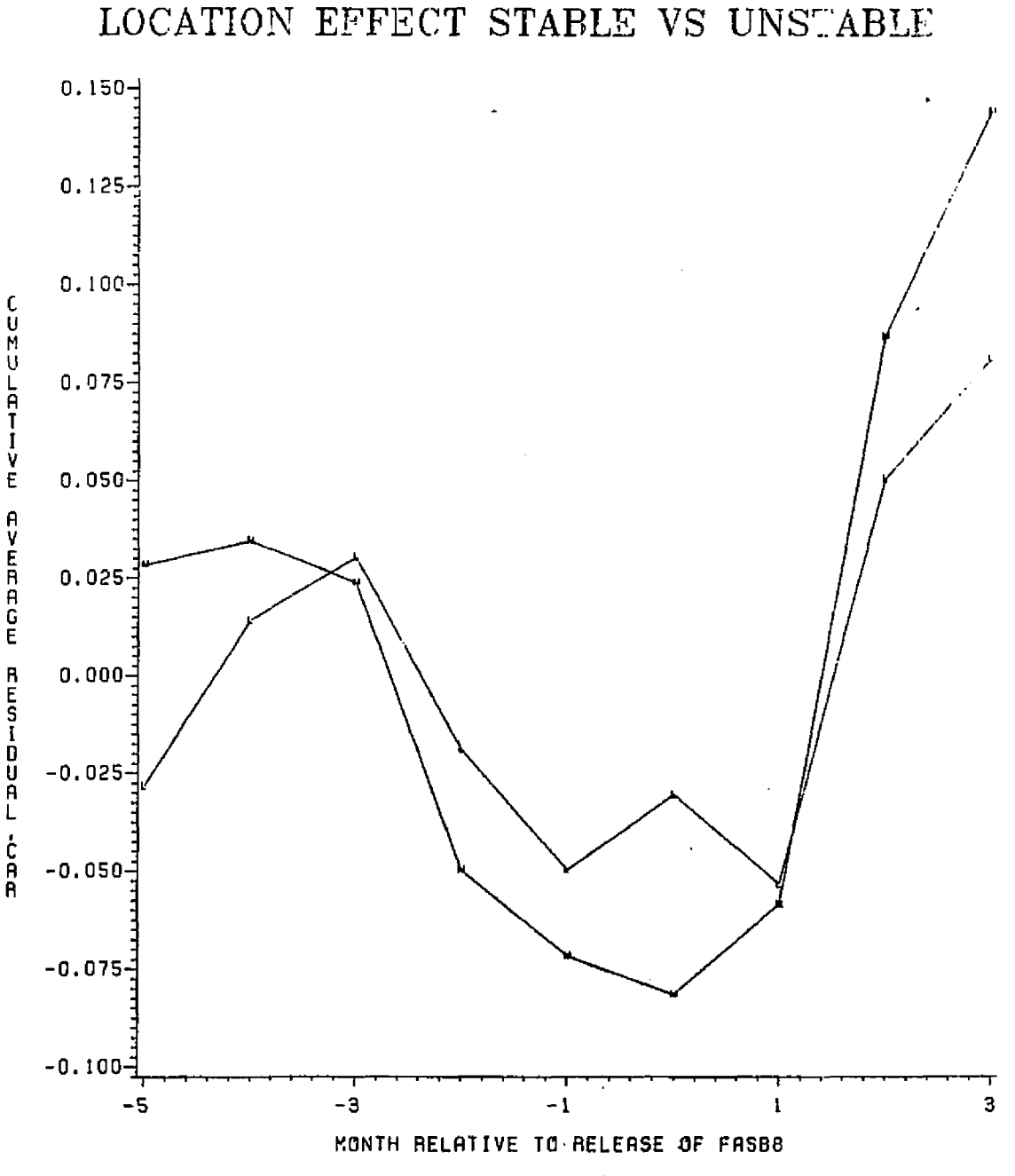
Month in Observation Period	(UC) Experimental Firms			(SC) Experimental Firms		
	Monthly AR	% of Negative Residuals	Monthly CAR	Monthly AR	% of Negative Residuals	Monthly CAR
-5	.0285	50	.0285	-.0281	72	-.0281
-4	.0061	50	.0346	.0423**	28	.0142
-3	-.0108	46	.0238	.0161	44	.0303
-2	-.0735***	88	-.0497	-.0492***	84	-.0189
-1	-.0219	50	-.0716	-.0308	68	-.0497
0	-.0098	65	-.0814	.0193	56	-.0304
1	.0228	50	-.0585	-.0228*	56	-.0532
2	.1454***	27	.0869	.1037***	24	.0505
3	.0575*	38	.1444	.0308	44	.0813

(a) The number of firms with negative residuals relative to sample size.

* Significant at .10 level.

** Significant at .05 level.

*** Significant at .01 level.


LOCATION EFFECT STABLE VS UNSTABLE
0.150
0.125
0.100
0.075
0.050
0.025
0.000
-0.025
-0.050
-0.075
-0.100
CUMULATIVE AVERAGE RESIDUAL CAR
-5
-3
-1
1
3
MONTH RELATIVE TO RELEASE OF FASB8
M=MOST AFFECTED FIRMS
L=LEAST AFFECTED FIRMS

FIGURE(3)

CAR for the experimental portfolio from Group 1 (SC) was labeled by the letter L for least affected firms.

By looking at Figure 3, one can notice the spread in the CAR between the two portfolios from period t = -3 to t = 0. In period t = 0, the announcement month of Statement 8, the spread was at its highest amounting to more than 10 percent.

The above analyses supports the conclusion that the location factor plays an important role. The market reaction to Statement 8 was different from one MNC to another based on the locations of the subsidiaries.

(2) Magnitude Effect

Another factor that is considered in this study is the magnitude factor. The general belief is that the effect of Statement 8 on MNC security prices varied from one MNC to another based on each firm's foreign investments relative to the firm's total assets. To investigate this, MNCs were grouped into two groups. Group 3 (HM) include firms with a high percentage of foreign investments. Group 4 (LM) include firms with a low percentage of foreign investments. The previous chapter explained the method used to distinguish between the groups.

a - Group 3 (HM):

The average residuals (AR) and the cumulative average residuals (CAR) during the 19 month-observation period

are presented in Table 7 for both experimental and control portfolios. Figure 4 displays the behavior of CAR for both portfolios during the same observation period.

As was the case with the previous two groups, 1 and 2, the market reacted to the Statement two months before it became official. At period t = -2, the average stock prices for the experimental portfolio dropped by 9.2 percent. The market reaction to the Statement was also negative for the control portfolio. The average stock prices for the control portfolio dropped by 7.6 percent in the same period. Although the drop in the experimental portfolio average prices was higher than the control portfolio, the difference was not significant.

The drop in stock prices for both portfolios was almost identical using five month-period from t = -3 to t = 1. The average stock prices dropped by 7.4 percent for the experimental portfolio and by 7.1 percent for the control portfolio in the same period.

In Figure 4, the sharp decline of both portfolios stock prices which started at t = -2 is shown. This decline lasted for four periods from t = -2 to t = 1. Notice the spread between the two portfolios during this four month-period. Starting from period t = 2, the prices of the experimental portfolio took an upward swing while the prices for the control portfolio took a less upward swing.

TABLE 7

Residual Summary Statistics for Group 3 (HM)

Month in Observation Period	Experimental Firms Monthly AR	Experimental Firms Monthly CAR	Control Firms Monthly AR	Control Firms Monthly CAR	Significance[a] of Residual Differences
-9	.0501*	.0501	.0263	.0263	.46
-8	.0111	.0612	.0369	.0632	.38
-7	-.0144	.0468	.0150	.0782	.35
-6	.0490	.0958	.0222	.1005	.41
-5	-.0094	.0864	-.0436***	.0570	.28
-4	-.0061	.0803	.0221	.0791	.30
-3	.0150	.0954	.0085	.0875	.70
-2	-.0922***	.0032	-.0755***	.0121	.40
-1	-.0077	-.0044	-.0006	.0115	.82
0	.0173	.0128	.0207	.0322	.88
1	-.0068	.0060	-.0244	.0078	.39
2	.0649***	.0709	.0352	.0430	.43
3	.0046	.0755	-.0345*	.0085	.17
4	.0281	.1036	.0452	.0537	.56
5	-.0098	.0938	-.0309**	.0229	.27
6	.0268*	.1206	.0062	.0291	.18
7	-.0330*	.0876	.0049	.0340	.13
8	-.0002	.0871	.0036	.0376	.74
9	-.0148	.0725	-.0144*	.0232	.95

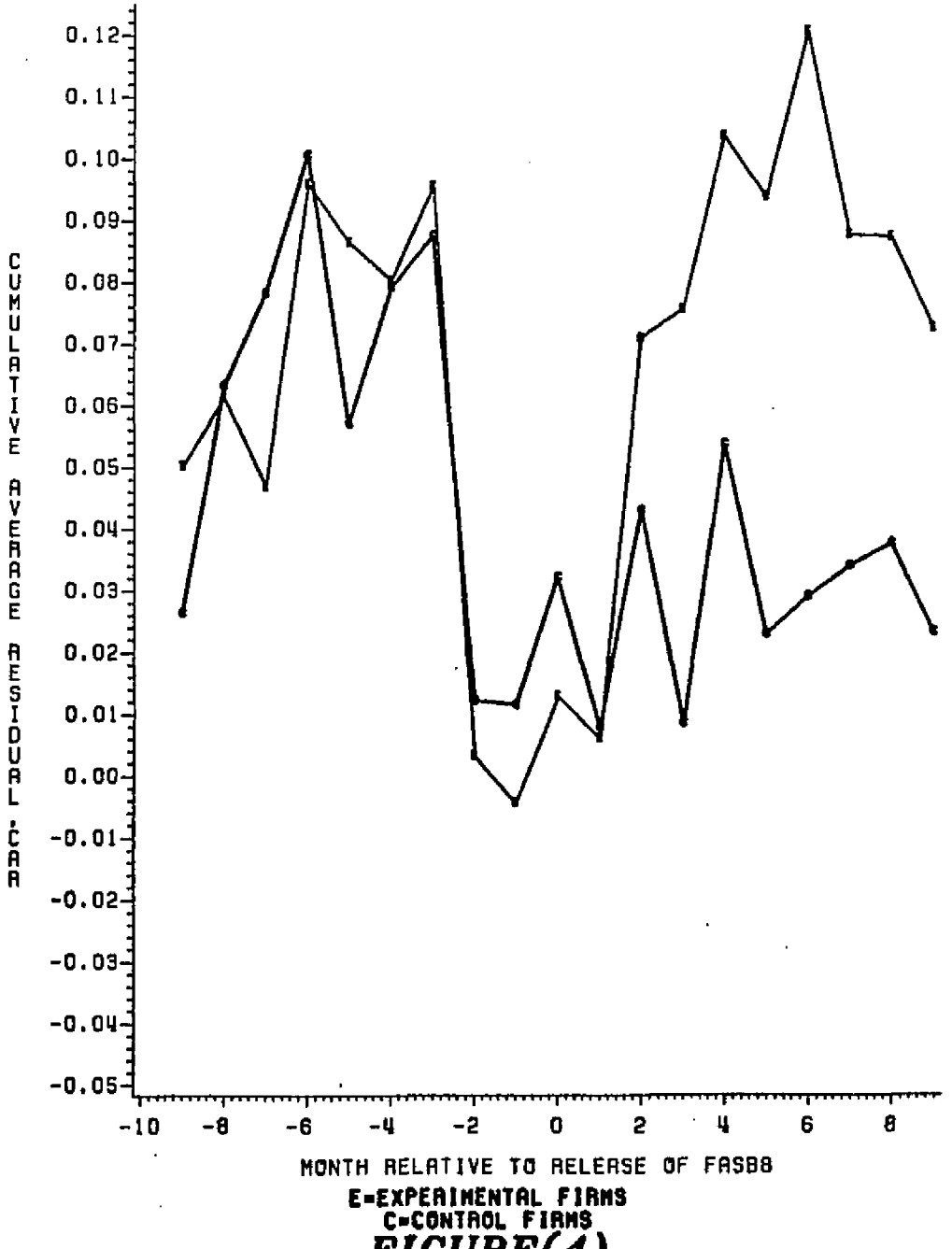
(a) Probability of significance that average residual differences = 0

* Significant at .10 level.

** Significant at .05 level.

*** Significant at .01 level.

GROUP(3) HIGH MAGNITUDE



FIGURE(4)

Based on the above analysis, Statement 8 did have significant negative impact on MNC stock prices in this group, Group 3 (HM). This negative impact was almost identical for both portfolios. The findings show that the market did react negatively to the Statement but without differentiating between the two portfolios.

b - Group 4 (LM):

The residual summary statistics for this group for both portfolios, experimental and control, are shown in Table 8. Figure 5 displays the CAR behavior for both portfolios during the 19 month-observation period.

The effect of Statement 8 on both portfolios stock prices was negative. The experimental portfolio stock prices dropped by 10.1 percent in five month period, from $t = -3$ to $t = 1$. The highest drop was in period $t = -2$ where stock prices dropped by more than 6 percent.

The control portfolio stock prices were negatively affected by the Statement as well. The average stock prices for this portfolio dropped by 9.8 percent during the same five month-period. In period $t = -2$ alone, the stock prices dropped by 7.8 percent.

The CAR displayed in Figure 5 shows that both portfolios stock prices were negatively affected by the Statement. The results show that the market reaction to the Statement was similar for the experimental and control portfolios.

TABLE 8

Residual Summary Statistics for Group 4 (LM)

Month in Observation Period	Experimental Firms		Control Firms		Significance[(a)] of Residual Differences
	Monthly AR	Monthly CAR	Monthly AR	Monthly CAR	
-9	.0402	.0402	-.0034	-.0034	.37
-8	.0514	.0916	.0049	.0015	.22
-7	.0097	.1013	.0447	.0462	.43
-6	.0323	.1337	.0103	.0565	.52
-5	-.0266	.1071	-.0034	.0532	.40
-4	.0251	.1322	.0683**	.1215	.30
-3	-.0157	.1165	.0173	.1388	.16
-2	-.0606***	.0559	-.0775***	.0613	.27
-1	.0021	.0580	-.0343	.0269	.22
0	-.0138	.0442	-.0088	.0181	.83
1	-.0129	.0313	.0062	.0244	.23
2	.1049***	.1362	.1141***	.1385	.84
3	.0383	.1746	.0165	.1550	.51
4	-.0245	.1500	.0109	.1660	.14
5	.0102	.1603	-.0423***	.1237	.05
6	-.0078	.1525	.0083	.1320	.44
7	-.0161	.1363	-.0292*	.1028	.49
8	.0045	.1409	.0176	.1205	.65
9	-.0119	.1289	-.0026	.1179	.61

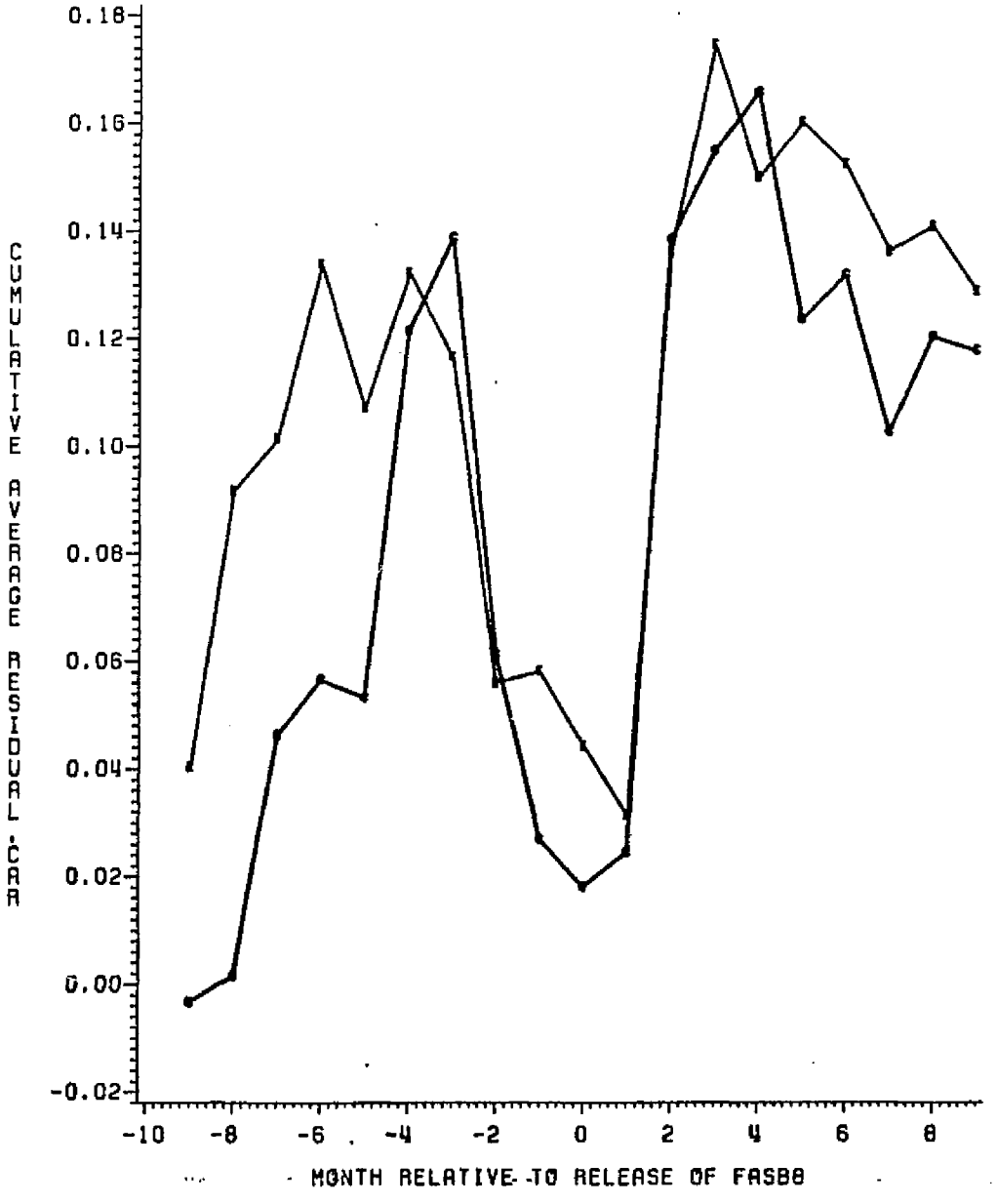
(a) Probability of significance that average residual differences = 0

* Significant at .10 level.

** Significant at .05 level.

*** Significant at .01 level.

GROUP(4) LOW MAGNITUDE



E=EXPERIMENTAL FIRMS
C=CONTROL FIRMS

FIGURE(5)

c - High Magnitude vs. Low Magnitude:

The findings for Group 3 (HM) and Group 4 (LM) show that portfolios stock prices in both groups were negatively affected by the release of Statement No. 8. The results also show that the market reaction was similar for the experimental and control portfolios under each group. This similarity was expected for Group 4 (LM) but not for Group 3 (HM).

In order to assess the importance of the foreign investment magnitude as a factor to the market, the experimental portfolio in Group 3 (HM) was compared with the experimental portfolio in Group 4 (LM). Table 9 summarizes the results of the AR and the CAR for both portfolios. Figure 6 depicts the CAR. A shorter observation period, from t = -5 to t = 3, was used to better focus on the Statement impact.

Both portfolios witnessed significant negative impact. This negative impact, however, varies in degree from one period to another. In period t = -2, the high magnitude portfolio average stock price dropped by 9.2 percent compared to a 6.1 percent drop for low magnitude portfolio. Using one single period, t = -2, the difference in the impact is shown. The impact on the high magnitude portfolio is one and one-half higher than the low magnitude portfolio.

TABLE 9

Residual Summary Statistics for Magnitude Effect

Most Affected vs. Least Affected

Month in Observation Period	(HM) Experimental Firms			(LM) Experimental Firms		
	Monthly AR	% of Negative Residuals	Monthly CAR	Monthly AR	% of Negative Residuals	Monthly CAR
-5	-.0094	56	-.0094	-.0266	63	-.0266
-4	-.0061	52	-.0155	.0251	27	-.0015
-3	.0150	32	-.0005	-.0157	63	-.0172
-2	-.0922***	96	-.0927	-.0606***	86	-.0778
-1	-.0077	44	-.1004	.0021	50	-.0757
0	.0173	40	-.0831	-.0138	68	-.0895
1	-.0068	44	-.0899	-.0129	59	-.1024
2	.0649***	28	-.0250	.1049***	22	.0025
3	.0046	64	-.0204	.0383	41	.0408

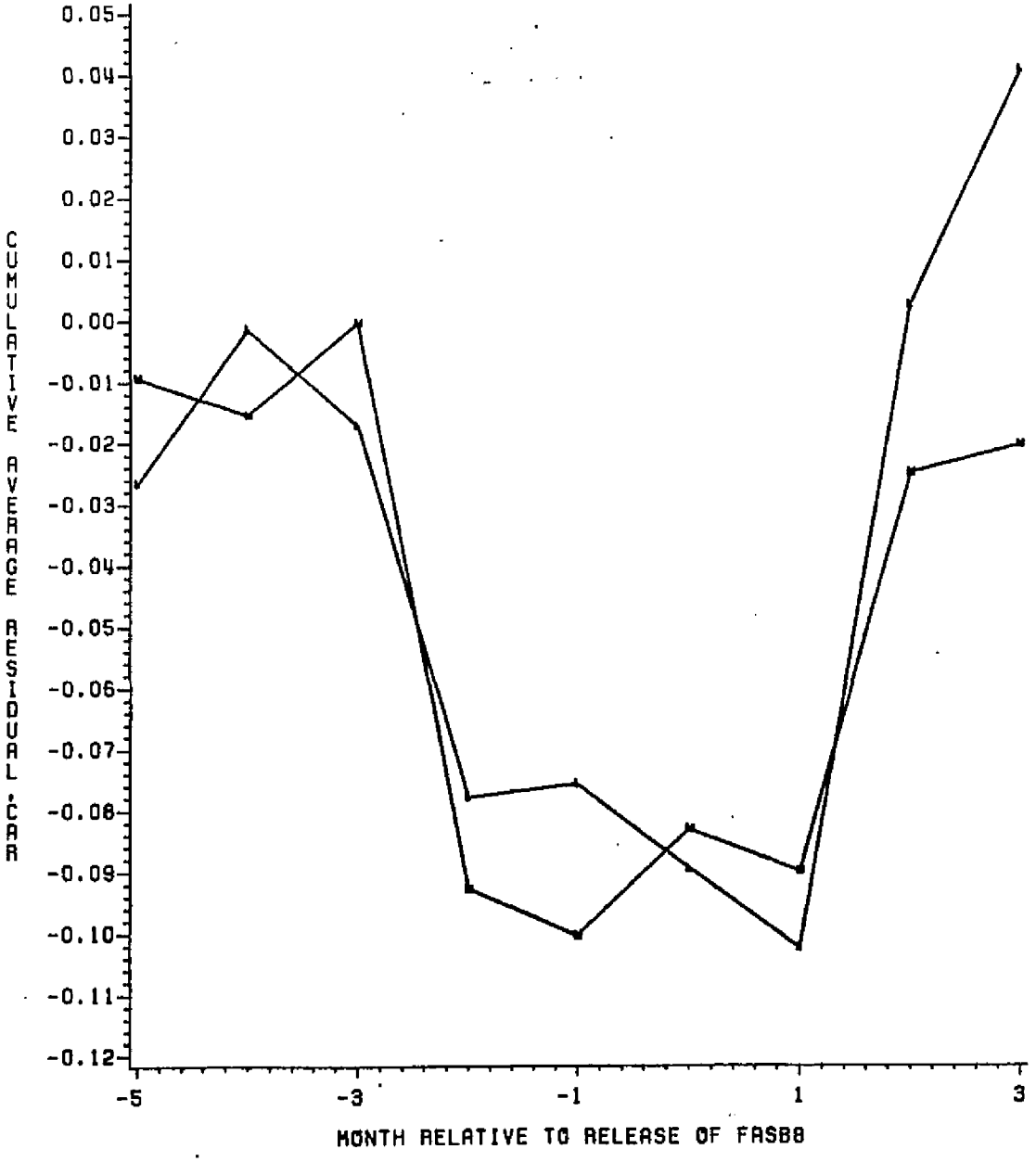
(a) The number of firms with negative residuals relative to sample size.

* Significant at .10 level

** Significant at .05 level.

*** Significant at .01 level.

MAGNITUDE EFFECT HIGH VS LOW



M= MOST AFFECTED FIRMS
L=LEAST AFFECTED FIRMS

FIGURE(6)

The difference in the overall impact does not seem as obvious. For the four month-observation period, from t = -2 to t = 1, the average stock prices for both portfolios dropped by almost the same magnitude. The high magnitude portfolio stock prices dropped by 8.9 percent while the low magnitude portfolio stock prices dropped by 8.5 percent in the same period.

The same conclusion can be made from Figure 6. Notice the significant drop in security prices for both portfolios at period t = -2. The CAR behavior is similar for the entire period except for periods t = -2 and t = -1 where the spread is more pronounced.

Based on the above analyses, the significance of the magnitude factor is high if a short span of period is considered, period t = -2 and t = -1. The overall effect of the factor was not found to be as significant. The conclusion is that the magnitude factor alone is not as significant as the location factor alone. The following section investigates the interaction effect of the two factors.

(3) Interaction Effect

In the previous two sections, the market reaction to Statement 8 on the basis of two factors was discussed The importance of each of the two factors, one at a time, was also investigated. In this section, the effect of Statement 8 on the basis of the interaction of the two

factors is discussed.

a - Group 5 (HM/UC):

This group represents firms with a high magnitude of foreign investments and with subsidiaries located in countries with unstable currencies. The market reaction to Statement 8 should be the highest for this group than any other group. Table 10 shows the residual summary statistics for both portfolios, experimental and control, to the 19 month-observation period. Figure 7 displays the behavior of the CAR for both portfolios during the same observation period.

From Table 10, the significant negative impact of the Statement on the experimental portfolio is shown. During the first 10 months of the observation period, the negative effect was shown in 8 months. The cumulative average residual (CAR) shows a negative downward drift accumulating to -10.6 percent in period 0 when the Statement was officially released.

The average residuals were significantly positive for two periods, t = -4 (June, 1975) and t = 2 (Dec., 1975). This could be due to some good news brought up in the form of earnings announcements. Despite this fact, the average residuals for the entire period of study accumulated to -4.9 percent.

The effect of the Statement on the control portfolio is negative also. The magnitude of this effect, however,

TABLE 10

Residual Summary Statistics for Group 5 (HM/UC)

Month in Observation Period	Experimental Firms		Control Firms		Significance[(a)] of Residual Differences
	Monthly AR	Monthly CAR	Monthly AR	Monthly CAR	
-9	-.0158	-.0158	-.0319	-.0319	.73
-8	-.0120	-.0038	-.0021	-.0339	.67
-7	-.0182	-.0220	.0099	-.0240	.28
-6	-.0036	-.0256	.0553	.0312	.17
-5	-.0349**	-.0605	.0127	.0440	.03
-4	.0501**	-.0104	.0346	.0786	.67
-3	.0151	.0048	.0200	.0986	.83
-2	-.0710***	-.0663	-.0800***	.0186	.59
-1	-.0258	-.0921	-.0346	-.0161	.73
0	-.0142	-.1062	-.0231	-.0392	.70
1	.0017	-.1046	.0157	-.0235	.58
2	.0867***	-.0179	.1015***	.0780	.62
3	.0152	-.0027	.0068	.0848	.78
4	-.0143	-.0170	-.0034	.0815	.62
5	-.0079	-.0249	-.0120	.0695	.84
6	.0173	-.0077	-.0119	.0576	.32
7	-.0033	-.0111	-.0377**	.0198	.29
8	-.0109	-.0219	.0328*	.0526	.11
9	-.0276***	-.0494	.0018	.0544	.28

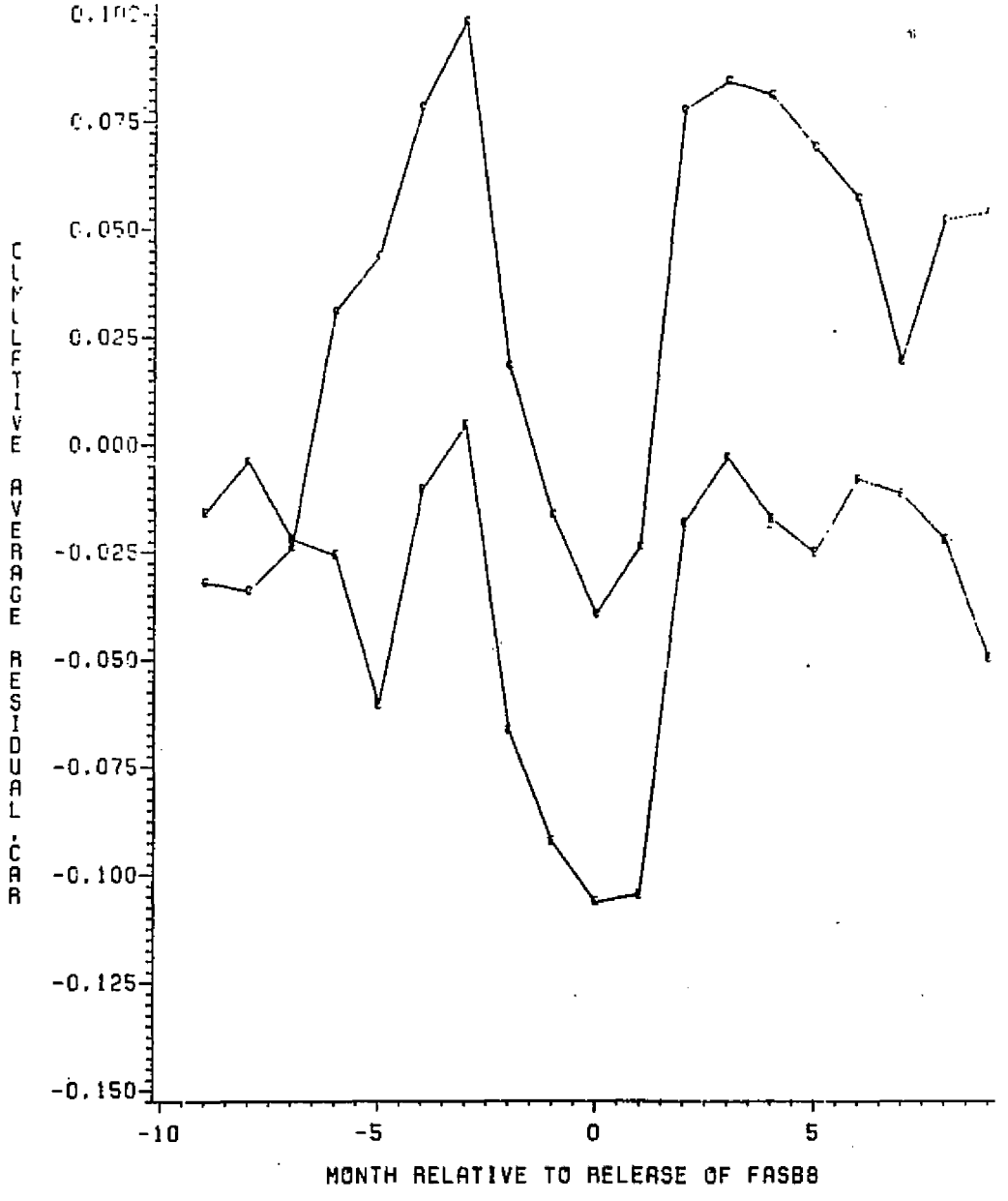
(a) Probability of significance that average residual differences = 0

* Significant at .10 level.

** Significant at .05 level.

*** Significant at .01 level.

GROUP(5) HIGH MAGNITUDE UNSTABLE CURRENCY



E=EXPERIMENTAL FIRMS
C=CONTROL FIRMS

FIGURE(7)

is not as large as for the experimental portfolio. The cumulative average residuals at period t = 0 is -3.9 percent compared to -10.6 percent for the experimental portfolio. The CAR for the control portfolio was 5.4 percent and -4.9 percent for the experimental portfolio during the entire period of study.

The behavior of the CAR, displayed in Figure 7, shows the difference in the effect. The Figure also shows that the control portfolio was negatively affected by the Statement. The CAR for both portfolios took a downward drift for three consecutive periods, from t = -2 to t = 0. The difference in the magnitude between the two portfolios can be seen in the spread between the CARs for both portfolios.

b - Group 6 (LM/SC):

This group represents the least affected firms. The firms included in this group are those firms with low magnitude of foreign investments' and with subsidiaries located in countries with relatively stable currencies. The effect of both portfolios, experimental and control, should not be high and the difference in magnitude should be minimal.

Table 11 shows the AR and CAR for both portfolios during the 10 month-observation period. The behavior of the CAR is depicted in Figure 8.

TABLE 11

Residual Summary Statistics for Group 6 (LM/SC)

Month in Observation Period	Experimental Firms Monthly AR	Experimental Firms Monthly CAR	Control Firms Monthly AR	Control Firms Monthly CAR	Significance[(a)] of Residual Differences
-9	.0249	.0249	.0318	.0318	.84
-8	.0282	.0531	.0135	.0453	.56
-7	.0014	.0545	.0299*	.0752	.46
-6	.0129	.0674	.0097	.0849	.90
-5	.0129	.0802	-.0256	.0593	.08
-4	.0183	.0985	.0162	.0755	.95
-3	.0234*	.1219	.0213*	.0968	.91
-2	-.0760***	.0459	-.0628***	.0339	.52
-1	-.0134	.0326	.0229	.0569	.22
0	.0358*	.0683	.0463**	.1031	.73
1	-.0152	.0531	-.0339**	.0692	.27
2	.0762***	.1293	.0117	.0809	.04
3	-.0009	.1284	-.0441**	.0368	.14
4	.0365*	.1650	.0658*	.1026	.45
5	-.0099	.1550	-.0111	.0915	.96
6	.0148	.1699	-.0096	.0819	.03
7	-.0023	.1676	-.0017	.0802	.98
8	.0029	.1704	-.0017	.0785	.80
9	.0034	.1738	-.0256	.0529	.11

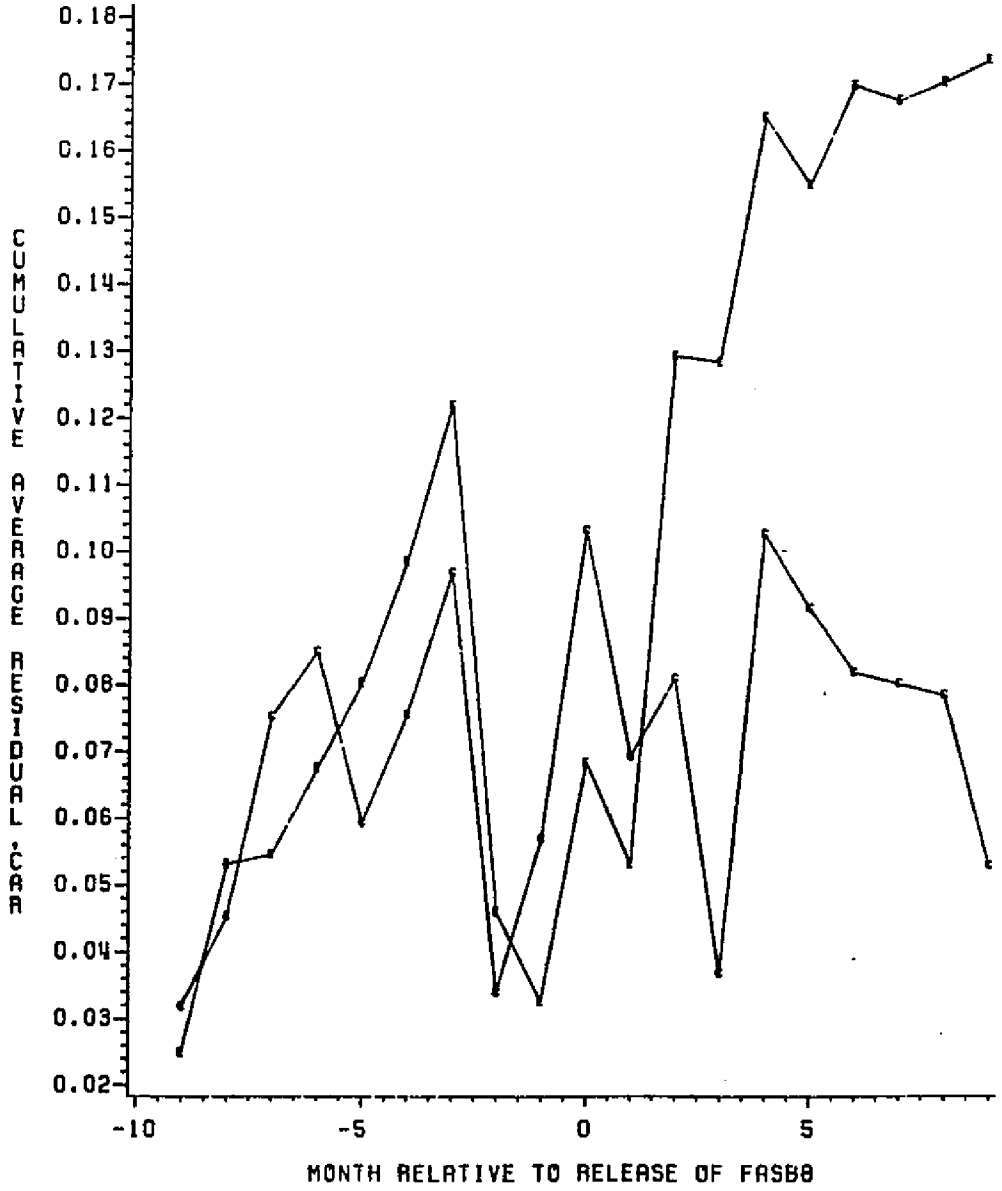
(a) Probability of significance that average residual differences = 0

* Significant at .10 level.

** Significant at .05 level.

*** Significant at .01 level.

GROUP(6) LOW MAGNITUDE STABLE CURRENCY



E=EXPERIMENTAL FIRMS
C=CONTROL FIRMS

FIGURE(8)

Residual analysis for the experimental portfolio shows some negative effect that is significant for period t = -2 only. The overall effect using a five month-observation period, from t = -3 to t = 1, is not so significant. The average stock prices dropped by 4.5 percent during this period. The average stock prices, however, increased by 3.6 percent in period t = 0. This increase was found significant at .10 level.

The results for the control portfolio were mixed. While the average stock prices dropped significantly in period t = -2 and period t = 1, the average stock prices increased significantly in period t = -3 and period t = 0. The overall effect during the same five month-period is not significant. The average stock prices dropped by less than 1 percent.

The cumulative average residual (CAR), displayed in Figure 8, shows similar behavior for both portfolios up to period t = 3. There is no noticeable spread between the two CARs for the first twelve months of the study. The sudden drop in stock prices for the control portfolios at period t = 3 cannot be explained. No significant effect or differences between the two portfolios could be found.

c - Most Affected vs. Least Affected:

The importance of the interaction effect can be investigated by comparing the experimental portfolio from Group 5 (HM/UC) with the experimental portfolio

from Group 6 (LM/SC). The first portfolio being the most affected, while the second is the least affected.

Table 12 shows the residual summary statistics for both portfolios. The comparison was focused on the nine month-observation period from t = -5 to t = 3. The behavior of the cumulative average residuals for both portfolios during the same period is depicted in Figure 9.

The findings show that both portfolios were affected by Statement No. 8. The magnitude of such an effect, however, was substantially higher for the most affected portfolio. While the average stock prices for this portfolio dropped by 9.4 percent in five month period from t = -3 to t = 1, the drop was 4.5 percent for the least affected portfolio.

The behavior of the CAR, for both portfolios, is displayed in Figure 9. Notice the similarity in behavior up to period t = -2. Notice also the build-up in the spread from this period on. The spread at period t = 0, when the Statement was officially released, amounted to 11.7 percent. The results are in support of the hypothesis.

(4) Summary of Results

This section summarizes the results of testing the first hypothesis (HO 1). The hypothesis states

TABLE 12

Residual Summary Statistics for Interaction Effect

Most Affected vs. Least Affected

Month in Observation Period	(HM/UC) Experimental Firms			(LM/SC) Experimental Firms		
	Monthly AR	% of Negative Residuals	Monthly CAR	Monthly AR	% of Negative Residuals	Monthly CAR
-5	-.0349**	83	-.0349	.0129	45	.0129
-4	.0501**	25	.0152	.0183	50	.0312
-3	.0151	46	.0303	.0234*	25	.0546
-2	-.0710***	96	-.0407	-.0760***	90	-.0214
-1	-.0258	67	-.0665	-.0134	50	-.0348
0	-.0142	63	-.0807	.0358*	30	.0010
1	.0017	38	-.0790	-.0152	65	-.0142
2	.0867***	21	.0077	.0762***	25	.0620
3	.0152	50	.0229	-.0009	60	.0611

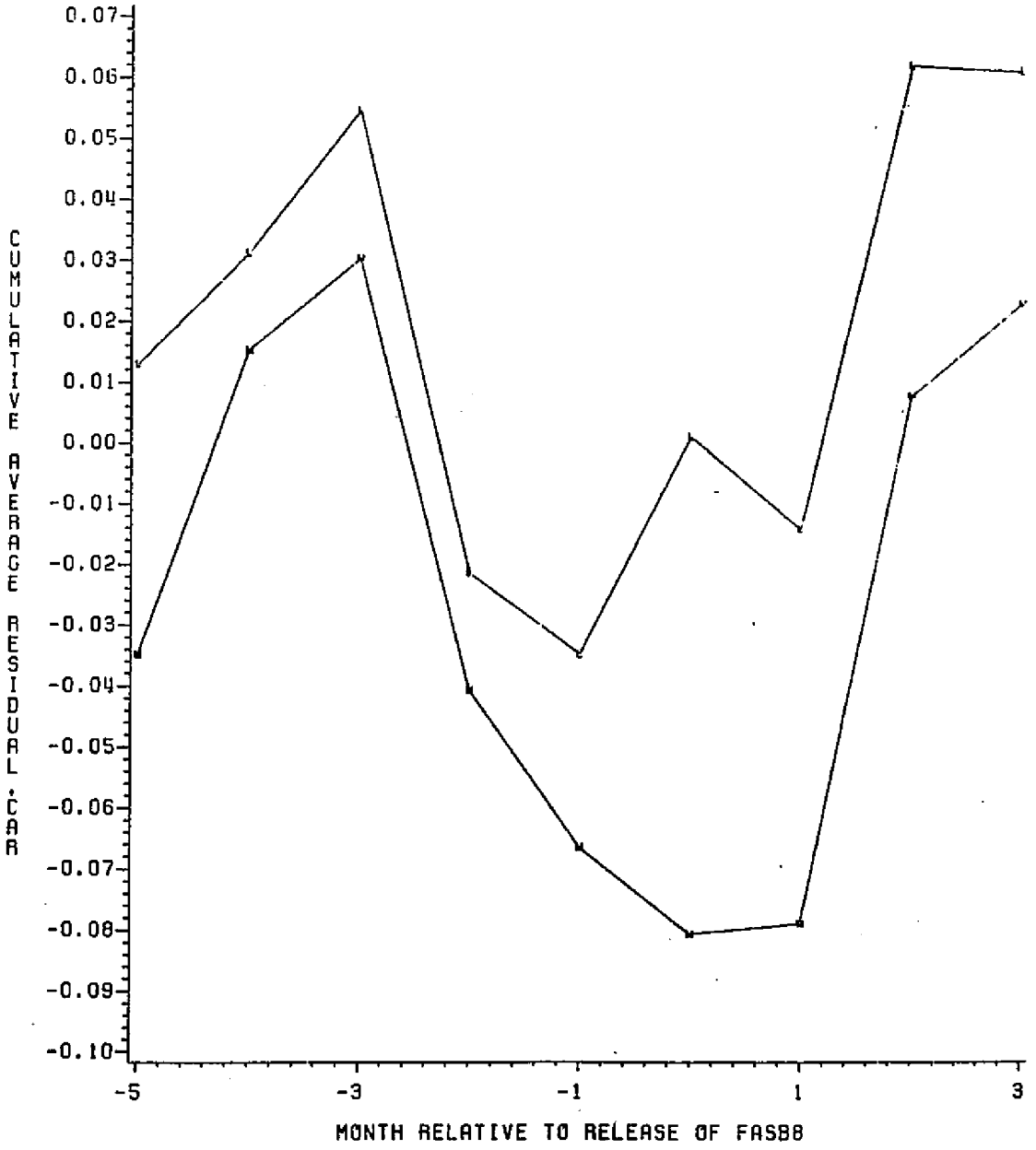
(a) The number of firms with negative residuals relative to sample size.

* Significant at .10 level.

** Significant at .05 level.

*** Significant at .10 level.

MAGNITUDE/LOCATION EFFECT



M= MOST AFFECTED FIRMS
L=LEAST AFFECTED FIRMS

FIGURE(9)

that Statement No. 8 did have a negative impact on MNC security prices. This effect, however, varies from one firm to another based on two factors. These two factors are location of subsidiaries and magnitude of foreign investments.

Six groups were formed using two portfolios, experimental and control, in each group. The market's immediate reaction to the Statement was measured, for each group, using residual analysis. The importance of each of the two factors and the interaction of both factors were tested. The results were shown in Tables 4 through 12. The cumulative average residuals were also displayed in Figures 1 through 9.

Based on the reported results, the following conclusions can be made:

(1) The release of Statement No. 8 did have significant negative impact on MNC security prices.

(2) The market reaction to the release of the Statement started in August, 1975, two months before the Statement was officially released.

(3) The magnitude of the negative effects varied from one group to another. The highest effect were found in Group 2 (UC) and Group 5 (HM/UC). The smallest effects were found in Group 1 (SC) and Group 6 (LM/SC). The effects on

Group 3 (HM) and Group 4 (LM) were found to be high.

(4) The results support, for the most part, the first hypothesis, HO 1. The high effect on Group 4 (LM) was not expected.

(5) The effects of the location factor and the interaction factor were found to be significant. The effect of the magnitude factor, on the other hand was not found to be as significant.

(6) The control portfolios were formed in a way where the effect of the Statement should not be significant. The results, however, suggest that the market did not realize the fact that those firms did not have to make significant changes in the method of translation. The Monetary/Nonmonetary method of translation is essentially the same as the Temporal Method required by Statement 8. The immediate recognition of translation gains/losses were followed by those firms before Statement No. 8.

[B] CHANGE IN LEVEL OF SYSTEMATIC RISK

The variability of returns from investing in a security is influenced by some factors that are specific to the firm and others that are more general. It has become common to regard total risk of a security as being composed of two components: (1) the firm's

specific component, known as unsystematic risk and (2) a more general component, known as systematic risk which is defined as that part of total variability that is correlated with the variability of the entire stock market.

Research has shown that when firms are grouped together to form portfolios, unsystematic risk for the set of firms is diversified away so that only the systematic risk remains as a factor determining rate of return. Further, testing has shown that the systematic risk tends to remain fairly stable over time for portfolios as large as 20 firms.

The second hypothesis, HO 2, states that because of Statement No. 8, corporate managements tended to take some suboptimal decisions to reduce the volatilities in reported earnings caused by the Statement's requirements. Securities markets are efficient and are expected to react adversely by reassessing the systematic risks of the affected firms securities resulting in an upward shift. The hypothesis also stated that the significance of the shifts in the firm's systematic risks varied from one group to another based on the location and magnitude factors.

For each of the six experimental portfolios an estimate of average systematic risk, beta, was computed for 48 months, Jan., 1971 to Dec., 1974, the Pre-FASB 8

period. A second estimate of average systematic risk for each experimental portfolio was generated for another 48 months, Jan., 1975 to Dec., 1978, the Post-FASB 8 period. This same procedure was followed to generate Pre- and Post-FASB 8 average beta value for the six respective control portfolios. The market model, Eq. (4-1), was used to obtain estimates of beta values for both periods. The estimate of average portfolio beta is a simple mean of the beta values for the firms comprising the portfolio.

The change in beta for each experimental portfolio was computed by subtracting the Pre-FASB 8 beta from the Post-FASB 8 beta. This measure of change in average systematic risk across the six experimental portfolios cannot be interpreted independently of a comparable measure of change in average systematic risk for each matched control portfolio. That is, conclusions about the effect of Statement No. 8 cannot be made by looking at the changes in systematic risk in either the experimental or control portfolios independently. For any matched pair of portfolios, in each group, the difference between the changes represent the impact of Statement No. 8 on each group.

(1) Location Effect

Table 13 summarizes the findings regarding comparative Pre- and Post-FASB 8 changes in the level of average systematic risk across the two pairs of portfolios for

TABLE 13

Change in Average Systematic Risk, Beta

Location Effect

	GROUP 1 (SC)		GROUP 2 (UC)	
	Experimental	Control	Exerimental	Control
(1) Pre-FASB 8 ($\bar{\beta}_1$)	1.34	1.31	1.37	1.39
(2) Post-FASB 8 ($\bar{\beta}_2$)	1.41	1.23	1.97	1.48
(3) Change Over Time (2-1)	.07	-.08	.60	.09
(4) Percentage of Change(a)	5	-6	44	6
(5) Significance of Change(b)	.32	.36	.001	.43
(6) Comparative Difference (Experimental Minus Control)	.15		.51	
(7) Significance of Difference(c)	.21		.001	

(a) Percentage of change = $(\bar{\beta}_2 - \bar{\beta}_1)/ \bar{\beta}_1$.

(b) The level of significance required to reject the hypothesis that $\bar{\beta}_2 = \bar{\beta}_1$.

(c) The level of significance required to reject the hypothesis that the difference in change = 0.

Group 1 (SC) and Group 2 (UC). Row 6 shows the comparative difference between the experimental and control portfolios for each group. Row 7 presents the level of significance required to reject the hypothesis that the difference in change is 0.

The findings for Group 1 (SC) show that while the average systematic risk for the experimental portfolio increased by 4 percent, the average systematic risk for the control portfolio decreased by 6 percent. Neither change was significant. The comparative difference in the change was not significant at a reasonable level of significance.

The experimental portfolio, in Group 2 (UC), had a significant increase in the average systematic risk. The average beta for this portfolio increased by 44 percent which is significant at .001 level. The average beta for the control portfolio, in this group, increased by 6 percent. This increase, however, was not significant. The comparative difference in the change between the two portfolios was highly significant at .001 level.

The results presented in Table 13 show that the change in method of translation tends to coincide with an increase in the market's assessment of systematic risk. The findings also show that the location of MNCs' subsidiaries was an important factor in the reassessment process. The experimental firms with subsidiaries

located in countries with relatively unstable currency witnessed a significant shift in average systematic risk. The findings support the hypothesis.

(2) Magnitude Effect

The summary results for Group 3 (HM) and Group 4 (LM) are presented in Table 14. The experimental portfolio's average systematic risk, in Group 3 (HM), increased by 12 percent. This increase was significant at the .10 level. The average systematic risk for the control portfolio, in the same group, decreased slightly by 2 percent. The comparative difference in changes between the experimental and control portfolios was significant at the .04 level. This finding corresponds with the stated hypothesis.

The average systematic risk for the experimental portfolio in Group 4 (LM) increased by 13 percent. This increase was found to be significant at the .04 level. No significant change was found for the control portfolio. The comparative difference in the change between the two portfolios was significant at the .10 level.

The findings here show that the systematic risk for the affected firms increased as a result of FASB 8. The comparative difference in changes between the experimental and control portfolios in Group 4 (LM) was not expected to be significant. The findings in Group 3 (HM) coincide with the hypothesis.

TABLE 14

Change in Average Systematic Risk, Beta,
Magnitude Effect

	GROUP 3 (HM)		GROUP 4 (LM)	
	Experimental	Control	Experimental	Control
(1) Pre-FASB 8 ($\bar{\beta}_1$)	1.24	1.27	1.36	1.39
(2) Post-FASB 8 ($\bar{\beta}_2$)	1.39	1.25	1.54	1.38
(3) Change Over Time (2-1)	.15	-.02	.18	-.01
(4) Percentage of Change(a)	12	-2	13	-1
(5) Significance of Change(b)	.10	.81	.04	.91
(6) Comparative Difference (Experimental Minus Control)	.17		.19	
(7) Significance of Difference(c)	.04		.10	

(a) Percentage of change = $(\bar{\beta}_2 - \bar{\beta}_1) / \bar{\beta}_1$.

(b) The level of significance required to reject the hypothesis that $\bar{\beta}_2 = \bar{\beta}_1$.

(c) The level of significance required to reject the hypothesis that the difference in change = 0.

(3) Interaction Effect

The results for Group 5 (HM/UC) are presented in the first two columns of Table 15. The average systematic risk for the experimental portfolio increased by 18 percent. This increase was significant at the .01 level. The control portfolio, on the other hand, witnessed insignificant decrease in average beta. The comparative difference in the change between the two portfolios was found to be significant at the .02 level.

The findings for Group 6 (LM/SC) are shown in the last two columns of Table 15. No significant change in average systematic risk for either portfolio was found. The comparative difference in the change between the two portfolios was not significant as was originally expected.

The findings for the interaction effect show that the location and magnitude factors, together, were considered as information to the market. The market viewed the experimental firm with low magnitude and with subsidiaries located in countries with relatively stable currencies not to be different from the matched control firms. Statement No. 8 did not cause much negative impact on firms in this group.

Group 5 (HM/UC) represent the other extreme of Group 6 (LM/SC). The effect of Statement No. 8 on the experimental portfolio in Group 5 (HM/UC) was significant. The

TABLE 15

Change in Average Systematic Risk, Beta

Interaction Effect

	GROUP 5 (HM/UC)		GROUP 6 (LM/SC)	
	Experimental	Control	Experimental	Control
(1) Pre-FASB 8 ($\bar{\beta}_1$)	1.22	1.29	1.38	1.39
(2) Post-FASB 8 ($\bar{\beta}_2$)	1.44	1.27	1.40	1.43
(3) Change Over Time (2-1)	.22	-.02	.02	.04
(4) Percentage of Change(a)	18	-2	1	3
(5) Significance of Change(b)	.01	.83	.81	.62
(6) Comparative Difference (Experimental Minus Control)	.24		-.02	
(7) Significance of Difference(c)	.02		.82	

(a) Percentage of change = $(\bar{\beta}_2 - \bar{\beta}_1) / \bar{\beta}_1$.

(b) The level of significance required to reject the hypothesis that $\bar{\beta}_2 = \bar{\beta}_1$.

(c) The level of significance required to reject the hypothesis that the difference in change = 0.

results coincide with the stated hypothesis.

(4) Most Affected Vs. Least Affected

In order to assess the importance of the location and magnitude factors, comparison between the experimental portfolios, under each factor, was needed. Table 16 presents a summary of statistics of the comparisons.

The location factor alone was found to be significant. The comparative difference in systematic risks between the two portfolios is significant at the .007 level.

Both portfolios under the magnitude factor witnessed significant shifts in their average systematic risks. The comparative difference in the changes between the two portfolios was not found to be significant. Differences in foreign investment magnitude between firms were not viewed by the market as important information.

The interaction between the factors was found to be significant. The most affected portfolio (HM/UC) experienced a higher shift in average systematic risk as compared to the least affected portfolio (LM/SC). The comparative difference in the change was significant at the .09 level.

(5) Summary of Results

The results of testing the second hypothesis, HO 2, were presented in the previous sections. From the findings shown in Tables 13 through 16, the following conclusions can be made:

TABLE 16

Change in Average Systematic Risk, Beta

Most Affected vs. Least Affected, Experimental Portfolios

	LOCATION		MAGNITUDE		INTERACTION	
	(UC)	(SC)	(HM)	(LM)	(HM/UC)	(LM/SC)
(1) Pre-FASB 8 ($\bar{\beta}_1$)	1.37	1.34	1.24	1.36	1.22	1.38
(2) Post-FASB 8 ($\bar{\beta}_2$)	1.97	1.41	1.39	1.54	1.44	1.40
(3) Change Over Time (2-1)	.60	.07	.15	.18	.22	.02
(4) Percentage of Change[(a)]	44	5	12	13	18	1
(5) Significance of Change[(b)]	.001	.32	.10	.04	.01	.81
(6) Comparative Difference (Experimental Minus Control)	.53		-.03		.20	
(7) Significance of Difference[(c)]	.007		.88		.09	

(a) Percentage of change = $(\bar{\beta}_2 - \bar{\beta}_1) / \bar{\beta}_1$

(b) The level of significance required to reject the hypothesis that $\bar{\beta}_2 = \bar{\beta}_1$.

(c) The level of significance required to reject the hypothesis that the difference in change = 0.

(1) As a result of Statement No. 8, the experimental portfolios average systematic risks did shift upwardly relative to the control portfolio.

(2) The comparative difference in beta changes for each matched pair of portfolios, experimental and control, was found to be significant for Groups 2, 3, 4, and 5.

(3) No significant differences were found in average systematic risks between the experimental and control portfolios in Groups 1 and 6.

(4) With the exception of Group 4 (LM), the results are in support of the stated hypothesis.

(5) While the location factor and the interaction factor were significant, the magnitude factor alone was not found to be significant.

The Impact of Foreign Currency Fluctuations On MNC Security Prices

In the previous chapter, three hypotheses were stated for testing the association between foreign currency fluctuations and MNC security prices. The methodology for testing the hypotheses was also defined. The association was tested by using two sub-periods:

(1) Pre-FASB 8 Period (Jan., 1971 - Dec., 1974)

(2) Post-FASB 8 Period (Jan., 1975 - Dec., 1978)

The third hypothesis states that there is a negative correlation between the security unsystematic returns and the exchange rate values. Two models were used to test for such an association.

The first model, Model I, assumes that the fluctuation in a currency values is a type of event that affect individual securities. The effect of this type of event is usually found in the security unsystematic returns. Equation (4-4) states the association notationally as follows

$$\rho(RC_{it}, \varepsilon_{it}) < 0 \qquad (4\text{-}4)$$

where:

RC_{it} = the return on currency i in period t, Eq. (4-5)

ε_{it} = a random error, unsystematic returns, obtained from the market model, Eq. (4-1).

The following linear regression model was used to test for the association between RC_{it}, as an independent variable, and ε_{it}, as a dependent variable

$$\varepsilon_{it} = \alpha_i + \beta_i RC_{it} + e_{it}$$

where:

α_i and β_i are parameters

e_{it} a random error term

ε_{it} and RC_{it} as defined before

i = 1,...50 (number of firms in the sample)

t = 1,...48 (48 months for each of the two sub-periods)

The association between the two variables, ε_{it} and RC_{it}, was measured for each firm in the sample during the two sub-periods using linear regression, Product-moment correlation, and Spearman-rank correlation. The results are shown in Appendix B. Table 17 summarizes the findings for all firms during the two sub-periods.

The findings presented in Appendix B and Table 17 can be summarized as follows:

Pre-FASB 8 Period

(1) The return on currency, RC_{it}, explains on the average, 3 percent of the variations on unsystematic returns. R^2 ranges from 0 percent to 19 percent. 20 percent of the correlations are significant at.10 level or lower.

(2) The sign of the correlation is mixed but it is negative on the average. The sign of the association was not found to be significant.

TABLE 17

Summary Statistics for Measuring the Association

Using Model I

	Linear Regression		Product-	Spearman-
	β	R^2	Moment Corr.	Rank Corr.
Pre-FASB 8 Period:				
Mean	- .003	.03	.14*	.14*
Variance	1.529	.00	.03	.03
Minimum Value	-4.190	.00	-.32	-.36
Maximum Value	3.360	.19	.44	.40
Post-FASB 8 Period:				
Mean	.062	.02	.11*	.12*
Variance	.135	.00	.02	.02
Minimum Value	-1.590	.00	-.63	-.25
Maximum Value	1.040	.40	.27	.41

*The mean was calculated using the absolute values.

(3) Product-moment correlation ranges from -.32 to .44 with a mean absolute value of .14.

(4) Spearman-rank correlation ranges from -.36 to .40 with a mean absolute value of .14.

Post-FASB 8 Period

(1) The linear association between the two variables was 2 percent on the average. R^2 ranges from 0 percent to 40 percent. Only 12 percent of the association was found to be significant at .10 level or lower.

(2) The sign of the correlation was not found to be significant. The slope of the linear association ranges from -1.59 to 1.04 with a mean of .06.

(3) Product-moment correlation ranges from -.63 to .27 with a mean absolute value of .11.

(4) Spearman-rank correlation ranges from -.25 to .41 with a mean absolute value of .12.

The association between MNC security prices and the fluctuations in currency values was tested using Model II, Eq. 4-6. The return on currency, RC_{it}, was introduced into the market model, Eq. 4-1, to assess the significance of this variable as a piece of information to the market. The results obtained from Model II

are compared with those obtained from the market model.

The comparisons between the two models were made for each of the 50 firms in the sample during the two sub-periods. The results are shown in Appendix B. Table 18 summarizes the findings.

The findings reported in Appendix B and Table 18 can be summarized as follows:

Pre-FASB 8 Period

(1) The variation in security prices was better explained after the addition of RC_{it} to the market model. The mean of R^2 increased from .30 to .32.

The Sum of Squares Error (SSE), on the average, decreased from .61 to .58. The decrease in SSE indicates the importance of the exchange rate in improving the model.

β_2 ranges from -4.21 to 2.98 with a mean of --.12. β_2 was found to be significant at .10 level or lower for only 12 percent of the sample.

Post-FASB 8 Period

(1) The mean R^2 for the market during this sub-period has dropped from .30 to .21. This phenomenon was first observed by King [1966].

TABLE 18

Summary Statistics for Measuring the Assocation

Using Model II

	Market Model		Model II		
	R^2	SSE*	β_2	R^2	SSE*
Pre-FASB 8 Period:					
Mean	.30	.61	- .12	.32	.58
Variance	.02	.16	1.21	.02	.15
Minimum Value	.08	.12	-4.21	.08	.12
Maximum Value	.52	1.83	2.98	.52	1.78
Post-FASB 8 Period:					
Mean	.21	.56	.13	.23	.51
Variance	.01	.16	.35	.01	.12
Minimum Value	.04	.05	-2.01	.08	.05
Maximum Value	.39	2.14	1.84	.42	1.92

*SSE = Sum of Squares Error.

As a result of adding RC_{it} to the market model, R^2 increased by 10 percent from .21 to .23.

(2) The improvement in the model was also noticed on the reduction of the Sum of Squares Error. The mean of SSE decreased from .56 to .51.

(3) The mean value of β_2 was .13 ranging from -2.01 to 1.84. Only 6 percent of the sample had a significant β_2 at .10 level or lower.

The fourth hypothesis, H4, states that there is positive correlation between the firm's systematic risk (β_i) and the variation in exchange rates (CV_i). The product moment and the Spearman-rank correlation were conducted during the two sub-periods.

The results did not show significant association. The sign of the correlation, however, was found to be positive as expected. During the Pre-FASB 8 period, product-moment correlation was .07 and the Spearman-rank correlation was .13. For the Post-FASB 8 period, the correlations were .02 and .05 respectively.

The variation in currency values was higher during the Post-FASB 8 period than during the Pre-FASB 8 period. The mean coefficient of variation (CV_i) increased from 7.44 to 10.74. The systematic risks increased over time also. The mean beta (β_i) increased from 1.37 to 1.53. The association between the differences over time was also studied. The product-moment correlation

was .13 and the Spearman-rank correlation was .21. The Spearman-rank correlation was significant at .15 level.

The fifth hypothesis, H5, states that the correlations stated in hypotheses three and four are stronger during Post-FASB 8 period than during Pre-FASB 8 period. The results did not show significant differences in correlations over time.

Summary of Results

The effect of foreign currency fluctuations on MNC security prices was studied during two sub-periods. The first, was the Pre-FASB 8 period from Jan., 1971 to Dec., 1974. The second sub-period was the Post-FASB 8 period from Jan., 1975 to Dec., 1978. Three hypotheses were raised and tested. From the findings presented in this section, the following conclusions can be made:

(1) The association between MNC security prices and the fluctuation in foreign currency values varies from one firm to another. This variation could be due to the issue of price and income elastcity of demand for the firm's products in both the domestic and export markets, and the sensitivity of the cost components to the devaluation of foreign currency which may combine to affect an increase or decrease in the present value of the firm's future

cash flows.

(2) On the average, 2 percent of the variations in MNC security prices could be explained by the variation in exchange rates.

(3) A positive correlation between a measure of currencies variations, CV_s, and the firms' systematic risk, β_3, was found. This correlation, however, was not significant at a reasonable level.

(4) No significant difference in the associations between the two sub-periods was found. While hypotheses three and four could not be rejected, hypothesis five could not be accepted.

Summary

In this chapter, the results and analyses have been presented. In the following chapter, the results are summarized, conclusions drawn, and implications discussed.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Restatement of Objectives

Issued in October, 1975, the Financial Accounting Standards Board Statement No. 8 unified the rules of translating foreign financial statement into dollars and the reporting of the resulting translations gains or losses. The most controversial element of Statement No. 8 was the reporting of the translation gains or losses due to the changing exchange rates applied to monetary items. Statement No. 8 required such gains or losses to be reported in earnings in the year of occurrence. The controversy arose due to the fact that immediate recognition of the translation gains and losses in income caused MNC earnings to be highly volatile.

Two types of studies were conducted on measuring the impacts of Statement No. 8. The first were questionnaire type studies where MNC managements were asked about their reactions to the Statement's requirements. The findings of these studies showed that corporate executives tended to make certain decisions to lessen the impact of the Statement on the reported income. These decisions were found to have negative cash flows and were not without costs.

The second type of studies was directed at measuring the impact of the Statement on MNC security behavior. Surprisingly, this type of study did not prove the alleged negative impact of Statement No. 8. A thorough investigation of the methodologies used in these studies revealed some major common methodological weaknesses that may have hampered the results and led to the wrong conclusions.

This study had two major thrusts. The first was to study directly the impact of Statement No. 8 on MNC security prices with a methodology that is improved over the prior studies and which fits MNCs. The second was an investigation of the association between the fluctuations in foreign currency values and MNC security prices.

Summary and Conclusions

A major assumption in this study was that MNCs have certain unique characteristics that make them different from pure domestic firms. To conduct empirical studies on MNCs, one should recognize and control for these characteristics. Failure to do so may hamper the results and lead to wrong conclusions.

Previous empirical studies of the impact of Statement No. 8 used methodologies that were designed for pure domestic firms. Pure domestic

firms are influenced, directly and in whole, by one set of factors, the home country factors. MNCs, on the other hand, are subject, directly and in whole, to two sets of factors, the home country factors and the host countries factors. One of the factors that is controlled and tested for in this study is the locations of MNCs' subsidiaries.

The stability of each host country's exchange rate relative to the dollar was used to distinguish between the locations of the firms' subsidiaries. Currencies that are highly volatile with respect to the dollar were labeled unstable currencies (UC). Currencies that were not highly volatile with respect to the dollar were labeled stable currencies (SC). MNCs were divided into two groups according to their subsidiaries' location. Group 1 represented the MNCs that had investments in countries with relatively stable currencies (SC). Group 2 represented MNCs that had investments in countries with relatively unstable currencies (UC).

The impact of Statement No. 8 on MNC security prices was hypothesized to vary from one firm to another based on the relative magnitude of each firm's foreign investments. MNCs were subdivided into two additional groups based on the magnitude of their foreign investments. Group 3 (HM), represented firms with high foreign investments relative to their total assets. Group 4 (LM), represented

firms with low foreign investments relative to their total assets.

The interaction effects of the location and magnitude factors was also studied. Two more groups were formed. Group 5 (HM/UC) included firms with high foreign investment magnitude and with subsidiaries located in countries with relatively unstable currencies. Group 6 (LM/SC) represented the other extreme.

The Disclosure Journal was used to identify each firm's method of translation and the treatment of the resulting translation gains or losses prior to the release of Statement No. 8. Those firms that used the Current/Noncurrent or Hybrid methods of translation were considered experimental because of the significant changes that they had to make to comply with Statement No. 8 requirements. All firms that used the Monetary/Nonmonetary method of translation along with the immediate recognition of the resulting gains or losses were considered control firms. A pair-matching technique based on industry membership and betas of the experimental and control firms was used within each of the six identified groups.

The market's immediate reaction was tested using a 19 month-observation period surrounding the release of Statement No. 8, October, 1975. Residual analysis was employed to measure the

effect of the statement on MNC security prices during the observation period. From the results presented for testing hypothesis No. 1, the following conclusions can be made

1. The release of Statement No. 8 did have significant negative impact on MNC security prices.
2. The market's immediate reaction to the release of the Statement started in August, 1975, two months before the Statement was officially released.
3. The magnitude of the negative effects varied from one group to another. The highest effects were found in Group 2 (UC), Group 3 (HM), Group 4 (LM), and Group 5 (HM/UC). The smallest effects were found in Group 1 (SC) and Group 6 (LM/SC).
4. The results are partially in support of the hypothesis. The high effect on Group 4 (LM) was not expected.
5. The location factor and the interaction factor were found to be significant. These two factors did have information contents to the market. The magnitude factor, on the other hand, was not found to be as significant. The market,

in its immediate reaction to the Statement, did not differentiate between firms on the basis of their foreign investment magnitude.

6. The control portfolios were formed in a way where the effect of the Statement should not be significant. The results, however, suggest that the market, in its immediate reaction to the Statement, did not realize the fact that those firms did not have to makg significant changes to comply with the Statement's requirements.

The second hypothesis stated that as a result of FASB 8, management of the affected firms tended to take suboptimal decisions to reduce the volatility in reported earning caused by the Statement's requirements. Securities markets are efficient and thus reacted adversely by reassessing the systematic risks of the affected firms securities resulting in an upward shift. The hypothesis also stated that the significance of the shifts in the firm's systematic risks varied from one group to another based on the location and magnitude factors.

Estimates of Pre-FASB 8 betas were obtained from the market model using 48 months of data, January 1971 through December 1974. The Post-FASB 8

betas' estimates were obtained using 48 months of data, from January 1975 through December 1978. Changes in average betas over time and the difference in changes between experimental and control portfolios were calculated for each of the six groups. From the results reported, the following conclusions can be made:

1. As a result of Statement No. 8, the experimental portfolios average systematic risks did shift upwardly relative to the control portfolios.
2. The comparative difference in beta changes for each matched pair of portfolios, experimental and control, was found to be significant for Groups 2 (UC), 3 (HM), 4 (LM) and 5 (HM/UC).
3. No significant differences were found in average systematic risks between the experimental and control portfolio in Group 1 (SC) and 6 (LM/SC).
4. With the exception of Group 4 (LM), the results are in support of the stated hypothesis.
5. While the location factor and the interaction factor were significant, the magnitude factor alone was not found to be significant. The inability of finding any significant differences between the high and low magnitude portfolios could be due the 20 percent line that was selected to differentiate between high and

low groups. Had a lower line, such as 10 percent, been selected, significant differences between the two groups could have been found. This point can be investigated in future research.

6. In measuring the immediate reaction of the market to the Statement, no significant differences were found between the experimental and control portfolios. After a longer period has elapsed, the market began to realize the differences between the experimental and control firms. This phenomenon could be due to the complexity of the Statement and/or to the conduct of business across boundaries.
7. The results are in support of the questionnaire type studies' findings, Evans, et al. [1978] and Shank, et al. [1979].

The process of translating MNC foreign financial statements into dollar figure requires two things (1) financial statements' figures in terms of foreign currencies, and (2) the dollar values of these foreign currencies that should be used to translate the figures into dollars. As an extension of measuring the impact of Statement No. 8 on MNC security prices, the impact of the fluctuation in foreign currency values was also evaluated.

The main hypothesis is that MNCs subsidiaries' net assets in terms of dollars, at certain time, is a function of the dollar value of the host country's currency. A devaluation of the host country's currency reduces the dollar value of the net assets and vice versa. To what extent the market incorporates the fluctuations in foreign currency values in the assessment of MNC security prices is investigated in the second part of the study.

Two models were employed. The first was a linear regression using the return on currency (RC_{it}) as an independent variable and the unsystematic returns of the security (ε_{it}) as a dependent variable. In the second model, the return on security was added to the market model as a second variable. The association between the variability of the currency values and the security systematic risk was also investigated.

A random sample of 50 multinational corporations was selected. The study was conducted using two sub-periods. The first was the Pre-FASB 8 period, from January 1971 through December 1974. The second was the Post-FASB 8 period, from January 1975 through December 1978. From the results reported in Chapter V, the following conclusions can be drawn.

1. The association between MNC security prices and the fluctuation in foreign currency values varies from one firm to another. This variation could be due to the firm's products sensitivity to currency fluctuation. An issue that is worth studying.
2. On the average, 2 percent of the variations in MNC security prices could be explained by the variation in exchange rates.
3. A positive correlation between a measure of currencies variations, CV_s, and the firms' systematic risk, B_s, was found. This correlation, however, was not significant at a reasonable level.
4. No significant differences in the associations between the two sub-periods was found.
5. The Post-FASB 8 period witnessed an upward shift in both currencies' variations and firms' systematic risks. The association in the differences in these two measures, over time, was found to be significant at .15 level.

Implications of Findings

The study has methodological, practical, and regulatory implications. Previous empirical studies conducted on measuring the impact of Statement No. 8 on MNC security prices

used methodologies designed to investigate issues concerning pure domestic firms. The replication of these methodologies on MNCs, which differ from domestic firms in many aspects, resulted in misleading conclusions. The methodology used in this study recognized and controlled for certain important factors that are unique to MNCs. Future empirical studies can benefit from the improved methodology used in this study.

Corporate managements may benefit from the findings of this study in selecting the functional currency that should be used for translating subsidiaries' financial statements. FASB Statement No. 52 gave certain broad guidelines for selecting the functional currency. The location, magnitude, and interaction factors, tested for in this study, proved to be important factors that may assist corporate managements not only in selecting the functional currency but in other investment decisions as well.

The findings have some major implications for investors, analysts, and other market participants. The factors tested for in this study should be considered in assessing MNC security prices and risk levels. The fluctuations in foreign currency values was found to be correlated, to a certain extent, with MNC security prices and systematic risks. The exchange rate can be used as an instrumental variable in predicting MNC

future systematic risks.

Most of the empirical studies draw their samples from firms that are listed on the New York Stock Exchange (NYSE). MNCs represent more than one-third of the firms listed on NYSE. The findings of this study showed that MNCs differ from domestic firms in many aspects. The aggregation of the two types of firms may lead to misleading conclusions. Certain efforts should be exercised to control for the extraneous variable, e.g. currency fluctuations, brought up by the inclusion of MNCs in the samples.

The findings of this study may further assist the Financial Accounting Standard Board in setting future rules regarding MNCs.

Limitations

There is always a trade-off between internal and external validity in any empirical study. This study is no exception. The imposition of sample selection criteria and the use of pair-matching eliminated certain firms that did not meet the criteria from being studied. While this enhanced the internal validity of the study, the external validity was limited. As a result, generalizability of the findings to all MNCs would not be appropriate.

Final Comment

The findings of this study showed that the location of MNCs' subsidiaries was one of the factors that the market considered in the reassessments of MNC security prices and systematic risks in reacting to FASB 8. The stability of the host countries' currencies was used as a measure to differentiate between firms' locations. The factors that affect the exchange rate values were indicated. The relative inflation rates between countries was one of the indicated factors.

Statement No. 52, Para. 11, imposed the host country's 3-year 100 percent cumulative inflation rate as a condition for selecting the reporting currency as a functional currency. It is obvious that that Board's reason for imposing this condition is to reduce the exposure to high translation losses as high inflation values are affiliated with currency devaluation.

The Board used the absolute inflation rate within a host country rather than the relative inflation rate between the host and the reporting countries. In addition, the relative inflation rate is only one factor, among many other factors, that affects the exchange rate values. The currencies relative stability should be used instead.

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APPENDIX A

MEASURING THE IMPACT OF STATEMENT NO. 8 ON MNC SECURITY PRICES

TABLE A-1

List of Firms Included in the Sample for Group 1 (SC)

Experimental Firms	Betas	SIC Code	Matched Control Firms	Betas	SIC Code
Hudson Bay Mining & Smelting	.98	1031	Northgate Exploration Ltd.	.87	1031
Superior Oil Co.	1.19	1311	Occidental Petroleum Corp.	.95	1311
Publicker Inds. Inc.	1.54	2085	Brown-Forman Distillers	1.22	2085
Compo Inds.	1.00	2200	Riegel Textile Corp.	1.13	2200
Warnaco Inc.	1.16	2300	US Inds.	1.12	2300
Jonathan Logan Inc.	1.90	2300	V. F. Corp.	1.58	2300
Farah Mfg. Co.	1.25	2300	Lilli Ann Corp.	1.49	2300
Murton-Norwich Products	.93	2800	Pennwalt Corp.	1.10	2800
ICN Pharmaceuticals Inc.	2.21	2830	Forest Labs. Inc.	1.98	2830
Stanely Home Products Inc.	.83	2841	Clorox Co.	.77	2841
Sherwin-Williams Co.	1.10	2850	Insilco Corp.	1.20	2850
Ferro Corp.	1.58	2890	Nalco Chemical Co.	1.78	2890
Monogram Inds. Inc.	1.59	3079	Cetec Corp.	1.24	3079
US Steel Corp.	.99	3310	Ampco-Pittsburgh Corp.	1.06	3310
Sterndent Corp.	1.41	3350	Triangle Inds.	1.22	3350
Xerox Corp.	1.30	3570	Pitney-Bowes Inc.	1.45	3570
Interlake, Inc.	.87	3630	Reece Corp.	1.27	3630
Watkins-Johnson	1.39	3662	Harris Corp.	1.42	3662
Motorola Inc.	1.38	3662	Raytheon Co.	1.30	3662
Norris Inds. Inc.	1.58	3714	Sealed Power	1.54	3714
Standard Motor Products, Inc.	1.82	3714	Whitaker Cable Corp.	1.65	3714
Mine Safety Appliances Co.	1.17	3841	Baxter Travenol Labs.	1.25	3841
Pueblo International Inc.	1.37	5411	Southland Corp.	1.23	5411
Litton Inds. Inc.	1.75	9997	City Investing Co.	1.65	9997
Gulf & Western Inds. Inc.	1.20	9997	Northwest Inds.	1.17	9997

TABLE A-2

List of Firms Included in the Sample for Group 2 (UC)

Experimental Firms	Betas	SIC Code	Matched Control Firms	Betas	SIC Code
Perini Corp.	.84	1600	Dravo Corp.	.87	1600
Elgin National Inds.	.77	1600	Halliburton Co.	.78	1600
Blue Bell Inc.	1.58	2300	Levi Strauss & Co.	1.45	2300
Dow Jones & Co. Inc.	.99	2711	Simplicity Pattern Co.	1.00	2721
Allied Chemical Corp.	.86	2800	Nat'l Distillers & Chem.	.81	2800
Celanese Corp.	.77	2800	Sterling Drug Inc.	.68	2800
Warner-Lambert Co.	1.22	2830	Abbott Labs.	1.16	2830
American Home Products Corp.	.70	2830	Merck & Co.	.66	2830
Bristol-Myers Co.	1.03	2830	Pfizer Inc.	.95	2830
American Huist & Derick Co.	1.59	3531	Barber-Greene Co.	1.76	3531
Portec Inc.	1.35	3531	Clark Equipment Co.	1.55	3531
Kulicke & Soffa Inds.	1.79	3550	Hobart Corp.	1.60	3550
Selas Corp. of America	1.65	3560	A.T.O. Inc.	1.66	3560
Systems Engineering Labs.	2.10	3573	Applied Magnetics Corp.	2.13	3573
Electronic Associates Inc.	1.74	3573	Memorex Corp.	2.08	3573
Electronic Memories & Magnet.	1.45	3573	Data General Corp.	1.32	3573
General Automation	1.02	3573	Sperry Corp.	1.17	3573
National Semiconductor Corp.	2.37	3670	High Voltage Engineering	2.25	3670
CTS Corp.	1.93	3679	Burndy Corp.	2.03	3679
Augat Inc.	1.47	3679	Superior Electric Co.	1.50	3679
Gerber Scientific Inc.	1.47	3811	Beckman Instruments Inc.	1.33	3811
Sun Electric Corp.	1.10	3825	Tektronix Inc.	1.38	3825
Minnesota Mining & Mfg. Co.	.94	3861	Eastman Kodak Co.	.87	3861
Seatrain Lines	1.50	4400	Offshore Logistics	1.89	4400
Seaboard World Airlines	1.89	4511	Northwest Airlines, Inc.	1.63	4511
Marriott Corp.	1.45	5812	McDonald's Corp.	1.70	5812

TABLE A-3

List of Firms Included in the Sample for Group 3 (HM)

Experimental Firms	Betas	SIC Code	Matched Control Firms	Betas	SIC Code
Hudson Bay Mining & Smelting	.98	1031	Northgate Exploration Ltd.	.87	1031
Santa Fe International	1.15	1381	Delhi Int'l Oil Corp.	1.27	1311
Sedco Inc.	1.05	1381	Occidental Petroleum Corp.	.95	1311
Coca-Cola Co.	1.32	2086	Pepsico Inc.	1.58	2086
Blue Bell Inc.	1.58	2300	V. F. Corp.	1.58	2300
Warnaco Inc.	1.16	2300	Levi Strauss & Co.	1.45	2300
Allied Chemical Corp.	.86	2800	Sterling Drug Inc.	.68	2800
Monsanto Co.	1.13	2800	Pennwalt Corp.	1.10	2800
Warner-Lambert Co.	1.22	2830	Abbott Labs.	1.16	2830
ICN Pharmaceuticals Inc.	2.21	2830	Forest Labs. Inc.	1.98	2830
Schering-Plough	.76	2830	Merck & Co.	.67	2830
SmithKline Corp.	.99	2830	Pfizer Inc.	.95	2830
Gillette Co.	.97	2844	Avon Products	1.10	2844
Ferro Corp.	1.58	2890	Lawter Chemicals Inc.	1.82	2890
Loctite Corp.	.94	2890	Lubrizol Corp.	.70	2890
Xerox Corp.	1.30	3570	Pitney-Bowes Inc.	1.45	3570
Singer Co.	.91	3630	Reece Corp.	1.30	3630
Oak Inds. Inc.	1.90	3679	Burndy Corp.	2.03	3679
Digital Equipment	1.29	3573	Sperry Corp.	1.17	3573
Donaldson Co. Inc.	1.41	3714	Whitaker Cable Corp.	1.65	3714
Sybron Corp.	1.61	3841	Baxter Travenol Labs.	1.25	3841
Minnesota Mining & Mfg. Co.	.94	3861	Eastman Kodak Co.	.87	3861
National Detroit Corp.	.82	6025	Philadelphia Nat'l Corp.	.69	6025
Litton Inds. Inc.	1.75	9997	Whittaker Corp.	2.15	9998

TABLE A-4

List of Firms Included in the Sample for Group 4 (LM)

Experimental Firms	Betas	SIC Code	Matched Control Firms	Betas	SIC Code
Farah Mfg. Co.	1.25	2300	U. S. Inds.	1.13	2300
Commerce Clearning House	1.08	2721	Simplicity Pattern Co.	1.00	2721
Stauffer Chemical Co.	.88	2800	Nat'l Distillers & Chem.	.81	2800
Oakite Products	1.07	2841	Clorox Co.	.77	2841
Sherwin-Williams Co.	1.10	2850	Insilco Corp.	1.20	2850
Monogram Inds. Inc.	1.59	3079	Cetec Corp.	1.24	3079
Kaiser Steel Corp.	1.21	3310	Ampco-Pittsburgh Corp.	1.06	3310
Sterndent Corp.	1.41	3350	Triangle Inds.	1.22	3350
American Hoist & Derrick	1.59	3531	Barber-Greene Co.	1.76	3531
Curtiss-Wright Corp.	1.47	3560	A-T-O Inc.	1.66	3560
Milton Roy Co.	1.70	3560	LFE Corp.	1.86	3560
Reynolds & Reynolds	1.98	3573	Storage Technology Corp.	2.35	3573
Honeywell Inc.	1.37	3573	Data General Corp.	1.32	3573
Thomas & Betts Corp.	1.43	3679	Superior Electric Co.	1.50	3679
Norris Inds. Inc.	1.58	3714	Sealed Power	1.54	3714
American Sterilizer Co.	1.30	3841	Amer. Hosp. Supply	1.67	3841
Tiger Int'l	1.45	4511	Northwest Airlines Inc.	1.63	4511
Marriott Corp.	1.45	5812	McDonald's Corp.	1.70	5812
Harris Bankcorp Inc.	1.03	6022	First Wisconsin Corp.	.96	6022
Textron Inc.	1.45	9997	City Investing Co.	1.65	9997
Signal Cos.	1.09	9997	Northwest Inds.	1.17	9997

TABLE A-5

List of Firms Included in the Sample for Group 5 (HM/UC)

Experimental Firms	Betas	SIC Code	Matched Control Firms	Betas	SIC Code
Santa Fe Int'l	1.15	1381	Delhi Int'l Oil Corp.	1.27	1311
United Brands	1.58	2010	Pepsico Inc.	1.58	2086
Blue Bell Inc.	1.58	2300	Levi Strauss & Co.	1.45	2300
Hercules Inc.	.90	2800	Sterling Drug Inc.	.68	2800
Warner-Lambert Co.	1.22	2830	Abbott Labs.	1.16	2830
American Home Products	.70	2830	Merck & Co.	.66	2830
American Cyanamid Co.	1.01	2800	Pfizer Inc.	.95	2830
Uniroyal Inc.	1.30	3000	Raychem Corp.	1.59	3079
Corning Glass Works	1.44	3221	Owens-Illinois Inc.	1.06	3221
Bundy Corp.	.83	3310	Alcan Aluminum Ltd.	.45	3330
Stanley Works	1.21	3429	Signode Corp.	1.65	3499
Control Data Corp.	1.96	3570	Outboard Marine Corp.	1.91	3510
Digital Equipment	1.29	3573	Koehring Co.	1.64	3531
Rexnord Inc.	1.13	3560	Clark Equipment Co.	1.55	3531
Emhart Corp.	.79	3550	Sperry Corp.	1.17	3573
Int'l Rectifier Corp.	1.63	3679	Burndy Corp.	2.03	3679
Ranco Inc.	.97	3820	Beckman Instruments Inc.	1.33	3811
Minnesota Mining & Mfg. Co.	.94	3861	Eastman Kodak Co.	.87	3861
Sybron Corp.	1.61	3841	Tektronix Inc.	1.38	3825
Chemical New York Corp.	1.21	6022	Wells Fargo & Co.	1.44	6025

TABLE A-6

List of Firms Included in the Sample for Group 6 (LM/SC)

Experimental Firms	Betas	SIC Code	Matched Control Firms	Betas	SIC Code
McCormick & Co.	1.11	2099	Brown-Forman Distillers	1.22	2085
Farah Mfg. Co.	1.25	2300	U. S. Inds.	1.13	2300
Reichhold Chemicals Corp.	.86	2820	Clorox Co.	.77	2841
Sherwin-Williams Co.	1.10	2850	Insilco Corp.	1.20	2850
FMC Corp.	1.52	2800	Nalco Chemical Co.	1.78	2890
Monogram Inds. Inc.	1.59	3079	Cetec Corp.	1.24	3079
U. S. Steel Corp.	.99	3310	Ampco-Pittsburgh	1.06	3310
Sterndent Corp.	1.41	3350	Triangle Inds.	1.22	3350
Masco Corp.	1.74	3430	Brooks & Perkins Inc.	1.51	3449
ARO Corp.	1.01	3560	Caterpillar Tractor Co.	1.18	3531
Esterline Corp.	1.70	3540	LFE Corp.	1.86	3560
Brunswick Corp.	1.76	3510	Barry Wright Corp.	1.63	3573
Tokheim Corp.	2.29	3580	Tyco Labs. Inc.	2.29	3560
Thomas & Betts Corp.	1.43	3679	Harris Corp.	1.42	3662
Interlake Inc.	.87	3630	Raytheon Co.	1.27	3662
ACF Inds.	1.26	3740	White Motor Corp.	1.20	3713
Questor Corp.	1.53	3714	Sealed Power	1.54	3714
Federal-Mogul Corp.	1.01	3714	General Dyanamics Corp.	1.08	3721
Norris Inds. Inc.	1.58	3714	Advance Ross Corp.	1.45	3728
Bell & Howell Co.	1.70	3861	Amer. Hosp. Supply	1.67	3841
First Pennsylvania Corp.	1.31	6022	First Wisconsin Corp.	.96	6022
Purolator Inc.	1.65	7393	Automatic Data Processing	1.78	7370
Colt Inds.	1.41	9997	City Investing Co.	1.65	9997
Signal Cos.	1.09	9997	Northwest Inds.	1.17	9997

APPENDIX B

MEASURING THE IMPACT OF FOREIGN CURRENCY FLUCTUATIONS ON MNC SECURITY PRICES

TABLE B1

List of Firms Included in the Sample

1. American Brands, Inc.
2. Augat Inc.
3. Electronics Memories
4. Franklin Electro Co. Inc.
5. Franklin Mint Corp.
6. Hudson Bay Mining
7. Int'l Aluminum Corp.
8. Johnson Controls, Inc.
9. Libbey-Owens Ford Co.
10. Medtronic, Inc.
11. Murphy Oil Corp.
12. National Can Corp.
13. Ocean Drilling Explor.
14. Ogden Corp.
15. Publicker Inds.
16. Safeway Stores, Inc.
17. Schering-Plough Corp.
18. Sea Containers, Inc.
19. Sealectro Corp.
20. Sedco Inc.
21. Smithkline Corp.
22. Tonka Corp.
23. Trans Union Corp.
24. United Brands Co.
25. Weynberg Shoe
26. Wyly Corp.
27. Air Products & Chem.
28. Carter-Wallace Inc.
29. Cooper Labs, Inc.
30. Federal Resources Corp.
31. Loctite Corp.
32. Millipore Corp.
33. Morton-Norwich
34. Motorola, Inc.
35. NL Inds., Inc.
36. Alcan Aluminum Corp.
37. Bally Mfg. Corp.
38. Charles River Inc.
39. Nashva Corp.
40. Northgate Explor.
41. Outboard Marine Corp.
42. Pullman, Inc.
43. Raychem Corp.
44. Recognition Equip. Inc.
45. Technicolor, Inc.
46. Whittaker Corp.
47. Lea-Ronal, Inc.
48. Delhi Int'l Oil Corp.
49. Coherent Radiation
50. Offshore Logistics, Inc.

TABLE B2

Results of Measuring the Association Between MNC Security Prices and Exchange Rates Using Model I

	Pre-FASB 8 Period					Post-FASB 8 Period				
	Linear Regression			Product-moment corr.	Spearman-rank corr.	Linear Regression			Product-moment corr.	Spearman-rank corr.
	β	R^2	$P_r>F$			β	R^2	$P_r>F$		
1	.20	.01	.60	.08	-.03	-.01	.00	.87	-.03	-.01
2	.70	.06	.10	.24*	.22	-.06	.00	.71	-.06	-.01
3	- .68	.02	.36	-.14	-.12	.04	.00	.92	.02	.07
4	- .49	.04	.17	-.20	-.23	.02	.00	.90	.02	-.07
5	- .11	.00	.94	-.01	.08	.65	.07	.07	.26*	.07
6	-4.19	.09	.04	-.30**	-.36**	.06	.00	.69	.06	-.18
7	- .57	.02	.39	-.13	-.08	.31	.01	.45	.11	.18
8	- .79	.06	.09	-.24*	-.05	-.27	.03	.25	-.17	-.11
9	- .19	.00	.74	-.05	-.03	.13	.01	.45	.11	.08
10	- .11	.00	.85	-.03	.03	.18	.01	.53	.09	.12
11	-2.15	.02	.30	-.15	-.10	-.18	.06	.10	-.24*	-.17
12	- .77	.03	.23	-.17	-.10	.04	.00	.64	.07	.09
13	3.36	.19	.01	.44***	.18	.01	.00	.98	.00	-.02
14	- .03	.00	.93	-.01	.08	-.06	.00	.73	-.05	-.12
15	.40	.01	.56	.09	.13	.24	.01	.61	.08	.12
16	- .32	.02	.34	-.14	-.08	.03	.00	.86	.03	.03
17	.98	.06	.08	.25*	.33**	-.03	.00	.72	-.05	-.01
18	1.27	.03	.28	.16	.10	-.28	.02	.38	-.13	-.19
19	.89	.02	.34	.14	.18	.02	.00	.94	.01	.07
20	-1.07	.07	.07	-.27*	-.22	.18	.02	.38	.13	-.01
21	.38	.01	.47	.11	.20	.05	.01	.50	.10	.16
22	.80	.02	.33	.14	.20	.05	.00	.65	.07	-.02
23	-2.54	.04	.17	-.20	-.24*	.11	.07	.07	.27*	.11
24	- .19	.00	.77	-.04	-.12	.20	.01	.61	.08	-.02
25	.84	.04	.18	.20	.24*	.19	.01	.57	.08	.12
26	.90	.01	.44	.11	.06	.09	.00	.66	.15	.10
27	.72	.03	.23	.18	.15	-.03	.00	.88	-.02	-.04
28	- .97	.07	.08	-.26*	.00	-.11	.01	.62	-.07	.06
29	-2.23	.10	.02	-.32**	-.18	.42	.05	.15	.21	.41***
30	- .13	.00	.97	-.01	-.05	.08	.00	.74	.05	-.16

Table B2 (cont'd)

	Pre-FASB 8 Period					Post-FASB 8 Period				
	Linear Regression			Product-moment corr.	Spearman-rank corr.	Linear Regression			Product-moment corr.	Spearman-rank corr.
	β	R^2	$P_r>F$			β	R^2	$P_r>F$		
31	- .25	.03	.27	-.16	-.04	-.18	.00	.70	-.06	-.01
32	- .03	.00	.97	.00	.03	.33	.03	.25	.17	.31**
33	.85	.01	.53	.09	.18	-.07	.01	.56	-.09	.09
34	- .12	.00	.78	-.04	.11	-.08	.01	.43	-.12	-.08
35	- .75	.02	.32	-.15	-.18	.00	.00	.95	-.01	-.04
36	- .06	.02	.37	-.13	.17	.28	.00	.64	.07	.07
37	.81	.01	.50	.10	.11	1.04	.06	.09	.25*	.17
38	.08	.00	.84	.03	.00	.13	.00	.81	.04	-.04
39	- .39	.01	.56	-.09	-.04	.24	.01	.48	.12	.19
40	.15	.00	.93	.01	.05	-1.59	.40	.01	-.63***	-.25*
41	- .39	.00	.68	-.06	-.21	-.24	.01	.58	-.08	-.08
42	-1.02	.03	.26	-.17	-.24*	.31	.04	.20	.19	.25*
43	.34	.01	.56	.09	.16	.10	.00	.72	.05	.13
44	.02	.00	.99	.00	.04	.37	.02	.36	.14	.19
45	1.90	.06	.10	.24*	.13	.15	.01	.54	.09	.19
46	1.31	.05	.14	.21	.25*	-.19	.01	.63	-.07	.23
47	- .62	.02	.40	-.13	-.17	.05	.01	.59	.08	.33**
48	.66	.02	.36	.14	.07	.91	.04	.17	.20	.26*
49	2.95	.11	.02	.33**	.40***	.19	.00	.68	.06	.22
50	.30	.00	.69	.06	.07	-.70	.07	.08	-.26*	-.06

TABLE B-3

Results of Measuring the Association Between MNC Security Prices and Exchange Rates Using Model II

	Pre-FASB 8 Period					Post-FASB 8 Period				
	Market Model		Model II			Market Model		Model II		
	R^2	SSE	β_2	R^2	SSE	R^2	SSE	β_2	R^2	SSE
1	.46	.12	.20	.46	.12	.20	.05	-.04	.20	.05
2	.41	.36	.71*	.44	.34	.21	.43	-.09	.20	.40
3	.21	.93	- .69	.23	.91	.35	.93	.86	.37	.88
4	.49	.27	- .50	.51	.25	.08	.56	.08	.08	.56
5	.08	.81	- .11	.08	.81	.34	.59	.01	.33	.57
6	.24	.34	-4.21**	.31	.31	.21	.26	.06	.21	.26
7	.13	.92	- .57	.14	.83	.36	.90	.80	.38	.87
8	.33	.30	- .79*	.37	.28	.23	.37	-.40	.25	.36
9	.47	.19	- .19	.47	.19	.22	.23	.01	.26	.22
10	.12	.73	- .12	.13	.73	.15	.50	.46	.16	.48
11	.33	.34	-2.16	.34	.33	.12	.47	-.27	.14	.40
12	.35	.34	- .77	.37	.32	.23	.30	.02	.25	.29
13	.31	.65	.13***	.44	.52	.32	.40	.01	.31	.39
14	.31	.40	.00	.32	.40	.21	.21	-.02	.20	.21
15	.26	.76	.42	.27	.75	.10	1.54	-.15	.08	1.10
16	.46	.13	- .32	.47	.13	.14	.11	.05	.15	.10
17	.20	.26	.98*	.25	.24	.21	.26	-.12	.22	.21
18	.30	.71	1.27	.32	.69	.28	1.01	-.26	.30	.98
19	.09	.90	.89	.10	.88	.23	1.18	-.26	.22	1.08
20	.16	.68	-1.08	.21	.63	.19	.32	.36	.19	.29
21	.34	.22	.38	.35	.21	.09	.20	.13	.11	.18
22	.31	.53	.81	.32	.52	.33	.49	-.02	.37	.46
23	.38	.29	-2.54	.40	.27	.06	.23	.08	.10	.20
24	.36	.52	.00	.35	.51	.34	.69	.39	.35	.68
25	.37	.25	.85	.39	.23	.22	.22	.24	.23	.21
26	.35	1.09	.01	.36	1.07	.23	2.14	.09	.22	1.92
27	.46	.18	.72	.48	.17	.38	.15	-.35	.40	.14
28	.26	.51	-1.01	.31	.47	.21	.26	-.18	.21	.26
29	.17	1.04	-2.23**	.26	.92	.04	1.17	.94**	.11	.94
30	.11	1.03	- .13	.12	1.03	.20	.83	.08	.20	.82

Table B-3 (cont'd)

	Pre-FASB 8 Period					Post-FASB 8 Period				
	Market Model		Model II			Market Model		Model II		
	R^2	SSE	F_2	R^2	SSE	R^2	SSE	F_2	R^2	SSE
31	.11	.79	- .25	.14	.77	.25	.76	.68	.24	.73
32	.31	.64	- .02	.31	.64	.20	.40	.78	.22	.36
33	.18	.47	.86	.19	.45	.22	.22	- .14	.22	.22
34	.37	.37	- .12	.37	.37	.23	.26	- .15	.23	.25
35	.37	.26	- .75	.38	.25	.30	.23	.05	.32	.22
36	.08	.27	- .06	.10	.26	.20	.23	1.13	.21	.22
37	.28	1.55	.82	.28	1.52	.18	1.16	1.84	.28	.99
38	.45	.33	.08	.46	.32	.11	.56	.12	.13	.54
39	.52	.22	- .40	.52	.22	.08	.58	.44	.16	.45
40	.08	.96	.16	.08	.96	.10	.60	-2.01***	.26	.48
41	.49	.44	- .39	.49	.44	.38	.34	- .58	.40	.32
42	.18	.36	-1.07	.20	.35	.14	.45	.25	.15	.44
43	.47	.33	.34	.47	.32	.12	.45	.47	.15	.44
44	.29	1.79	.00	.28	1.75	.34	.79	.61	.34	.74
45	.34	.85	.05	.38	.80	.10	.60	.31	.13	.57
46	.37	.91	1.32	.40	.85	.29	.63	- .31	.30	.62
47	.44	.47	- .63	.46	.41	.39	.30	- .06	.42	.29
48	.18	.86	.69	.19	.84	.08	1.14	.96	.12	1.10
49	.37	.91	2.98**	.44	.79	.24	.92	.73	.30	.80
50	.28	1.83	.52	.28	1.78	.22	.52	-1.28*	.26	.45

VITA

Abdelsalam Kablan was born in El-Hamam Marriot, Egypt on September 25, 1951. His elementary and high school education was completed in the Banghazi, Libya public schools in 1969. He majored in Accounting at the University of Libya, Benghazi, receiving his Bachelor of Art degree in 1973. While working on the undergraduate degree, he worked in his family's textiles importing business. During the academic year 1973-1974, he taught at the University of Libya, Benghazi. He received the Master of Science degree in Accounting from the University of Wisconsin, Madison, in 1977. He received the Master of Business Administration in International Business from the University of Wisconsin, Madison, in 1978. While working on the masters' degrees, 1975-78, he was an active member in various international students' organizations. He is a member of the American Accounting Association and its International Accounting Section.